

Warrior Transition Leader

MEDICAL REHABILITATION HANDBOOK

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Warrior Transition Leader

MEDICAL REHABILITATION HANDBOOK

EDITED BY



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BORDEN INSTITUTE

Fort Detrick, Maryland

US ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL

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THIS BOOK IS DEDICATED TO THE
MEN AND WOMEN OF THE US ARMY WHO HAVE BEEN WOUNDED,
INJURED, OR BECOME ILL AS A RESULT OF THEIR SERVICE
TO THE UNITED STATES OF AMERICA,
TO THE FAMILIES, AND TO THE MANY PEOPLE
WHO HAVE RESPONDED TO HELP THEM
TO PROVIDE THE PROMISE OF A BRIGHTER TOMORROW.



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Foreword

OUR SERVICE MEMBERS AND THEIR FAMILIES are incredibly strong, resilient, and dedicated. As I travel and reflect upon a career spent with Soldiers and with Army and Military medics around the world, I am humbled and amazed at the strength and heart of the Military Family and the men and women in Army Medicine who protect and care for them. From the clinics and operating rooms of Walter Reed Army Medical Center to Forward Operating Bases in Afghanistan, our laboratories in Africa and Asia, and our installation service facilities, I am continuously awe-inspired by the overwhelming commitment to excellence and service. The US Army Medical Command (MEDCOM) employs every available resource to protect the Force and improve the health of Army Families—leading the way in innovative care and ensuring world-class treatment and rehabilitation for illness or injury.

The ability of Army Medicine to fully help wounded, ill, and injured Soldiers and all Warriors optimally recover is critical for the effective defense of our nation. George Washington, our first Commander in Chief, stated, “The willingness with which our young people are likely to serve in any way, no matter how justified, shall be directly proportional to how they perceive the Veterans of earlier wars were treated by the nation.”

Army leadership has worked tirelessly to establish a comprehensive support system for the wounded, ill, and injured in each phase of rehabilitation to reduce health issues, enable maximum recovery, and promote successful reintegration into the force or separation from the military. This book contributes to the Army’s extensive efforts to train those Soldiers requiring the closest attention and most extensive care—our Warriors in Transition (WTs). Maintaining a professional, multidisciplinary workforce to support WTs is critical; Warrior Transition Command leaders, nurse case managers, and primary care providers must collaborate to meet individual WT needs.

I encourage the entire MEDCOM and all leaders to understand their role in the Comprehensive Transition Plan (CTP), an inclusive program that permits individually tailored and aspirational plans for WTs. The CTP documents, synchronizes, and integrates the efforts of WTs, Families, MED-

COM staff, and external partners. Additionally, the CTP rapidly incorporates lessons, formalizes policy, and supports Warriors' current and future needs. Cadre must actively and regularly support the WT in routine activities such as physical fitness, therapy, and daily garrison activities.

The Army determined the foundation for the treatment of WTs decades ago as wounded, injured, and ill Soldiers returned from World War II. As an illustration, two Soldiers wounded in World War II sent to the same Army hospital for treatment would later become role models for contemporary Soldiers. The two Soldiers set the same goal—to eventually serve in Congress; each personally challenged the other to accomplish their goals. When Daniel Inouye of Hawaii got to the House of Representatives, he called his friend Bob Dole and asked how much longer it would take him to get elected. Both wounded Veterans served in the House and went on to distinguished careers in the US Senate. Overcoming numerous physical obstacles, they focused on their abilities, committed to optimal recovery, and ultimately dedicated their lives to federal service. Both men have spoken about the “tough love” they received from Army nurses, doctors, and medics who encouraged them to think about their abilities and goals. This book provides examples of wounded Soldiers from prior conflicts who have made important contributions as role models.

This handbook will serve as a resource for leaders within the MED-COM, as well as for leaders across the Army and the Department of Defense. Many wounded, ill, and injured Soldiers, Sailors, Airmen, and Marines who participated in Operation Enduring Freedom, Operation Iraqi Freedom, and Operation New Dawn have made tremendous rehabilitative progress, with significant numbers returning to active duty; their recoveries are amazing. The handbook is a collaborative effort with the Department of Veterans Affairs and private sector colleagues to aid WTs in overcoming physical and psychological hurdles and returning to productive lives.

This important work would not have been possible without the leadership of Rory A. Cooper, PhD; Colonel Paul F. Pasquina, MD; and Mr. Ron Drach—all Soldiers. I would like to thank these authors and the dedicated staff of the Borden Institute; their sense of urgency and focused efforts to create this book are commendable. The contributors have helped thousands of wounded, injured, and ill Soldiers to regain their self-reliance and pursue life goals.

ERIC B. SCHOOMAKER, MD, PhD
LIEUTENANT GENERAL, US ARMY
THE SURGEON GENERAL/COMMANDING GENERAL
US ARMY MEDICAL COMMAND

Preface

SOLDIERS AND THEIR FAMILIES are the Army's principal asset. They are at the core of the Army, and as an organization we have the sacred responsibility to care for our wounded, injured, and ill Soldiers. Every wounded, injured, or ill Soldier deserves—indeed has earned the right—to be provided with excellent medical care and a broad range of opportunities to allow him or her to succeed either through continuation on active duty or through becoming a successful Veteran.

As an all-volunteer force, many Soldiers view the Army as their professional home or at least as an important step along the way toward another career path. Their selfless service and commitment to defending freedom are to be respected and admired. America is well represented by this generation of Soldiers. Future historians will surely designate them as a Great Generation, having faced adversity with great courage, humility, patriotism, and honor.

Leaders of Warriors in Transition must help wounded, injured, and ill Soldiers to regain their bearings, to set their azimuth, and then aim high for success. This occurs from the early stages of healing through reintegration into the force or to the civilian community. Leaders of Warriors in Transition need to be involved with their Soldiers, to invigorate them, to inform them and be informed by them, and to inspire them to ultimately achieve their fullest potential. The Comprehensive Transition Plan is an essential tool for leaders and Soldiers to navigate the terrain and set a course for achieving their goals. The Comprehensive Transition Plan is a process, a framework for communication, and a living document to record outcomes for leaders, healthcare providers, and Soldiers and their Families. We encourage all Army leaders to read this book, to study it and take notes, and to implement their knowledge for the benefit of their Soldiers.

Our Army is strong; our commitment to Soldiers and their Families is strong, and the Army's wounded, injured, and ill Soldiers are Army Strong!

BRIGADIER GENERAL DARRYL WILLIAMS
COMMANDER, WARRIOR TRANSITION COMMAND
UNITED STATES ARMY MEDICAL COMMAND

Prologue

“As we express our gratitude, we must never forget that the highest appreciation is not to utter words, but to live by them.”

★ ★ ★

JOHN F. KENNEDY

WARRIOR TRANSITION LEADER MEDICAL REHABILITATION HANDBOOK is targeted toward helping Army leaders of all levels to assist wounded, injured, and ill Soldiers and their Families while undergoing medical rehabilitation or interacting with essential healthcare and community reintegration services. There are many facets to the successful healing and reintegration of Soldiers, whether they continue on active duty or become successful Veterans in their local communities. Information is presented in both a current and historical context to provide a broader perspective. This book should serve as a valuable tool for learning about the resources and processes that will maximize each wounded, injured, or ill Soldier’s chances for success, and be a resource that leaders will want to keep close to them.

This book provides information about the Army Warrior Transition Command, and key Army, federal agency, Veteran and military service organizations, and selected other organizations, services, and programs that are available to assist wounded, injured, and ill Soldiers and their Families. Accessible information about essential principles, practices, and definitions in medical rehabilitation is presented. Several vignettes are given about Soldiers who have successfully adapted to their impairments to lead remarkable lives as Soldiers or Army Veterans. Although geared toward nonmedical personnel working with wounded, injured, and ill Soldiers, material of interest to a much broader audience is contained within. The Comprehensive Soldier Fitness Program uses five domains to define the health of Soldiers, which fits

well with the foundations of this book: P = positive emotion, E = engagement, R = relationships, M = meaning and purpose in life, and A = accomplishment. These domain factors are referred to by their acronym, PERMA.

This book is intended to be a handbook, and as such covers a variety of key topics with sufficient depth to provide the reader with basic knowledge, but it is not intended to make people experts in medical rehabilitation or any of its various disciplines. However, it is the goal that leaders and staff working toward helping wounded, injured, and ill Soldiers and their Families develop a greater understanding of the medical rehabilitation and reintegration programs essential to the success of these Soldiers. Furthermore, leaders and staff should strengthen their arsenal through knowledge. Thirteen chapters cover essential topics that are written by experts on these various topics. Each chapter is written in language that is accessible to the nonmedical professional, but facilitates communication and collaboration. Many key concepts and models are presented that the serious reader should commit to memory and put into practice, eg, the social integrative model of disability to improve communication and empowerment, BASE (Build the center, Adjust, Say no to negativity, Establish connections) or FOB (Forward thinking, Opportunities, and Build a new life).

Through working with wounded, injured, and ill Soldiers and their Families, leaders and staff may experience demands unlike in any other unit. Leaders working with wounded, injured, and ill Soldiers must fully understand that all of them have scars, it is just that some of those scars cannot be seen, and everyone has chapters of their lives that they would rather leave unpublished. However, through using servant leadership to do everything reasonably possible to help Soldiers and advocate for Soldiers, always placing their needs first, and living by the Army's seven values, leaders can have a significant impact on the their lives. The editors of this book are grateful for this opportunity to contribute to improving the quality of life of wounded, injured, and ill Soldiers and to that of their Families. Each of the editors has in his or her own way been touched by his or her service in the Army, and by working with wounded, injured, and ill Soldiers and their Families. Hopefully, this book will prove helpful and be important reading for anyone working within the Warrior Transition Command, or who is closely involved with or interested in assisting wounded, injured, and ill Soldiers and their Families.

Respectfully,

RORY A. COOPER, PhD, COL PAUL F. PASQUINA, MD,
AND RON DRACH

Warrior Transition Leader

MEDICAL REHABILITATION HANDBOOK

It is critical that the Squad Leader, Nurse Case Manager, and Primary Care Manager meet as a team and support the Soldier and Family. “The CTP [Comprehensive Transition Plan] is not just a widget; it’s a program that embraces the Soldier and Family throughout recovery. Cadre cannot just sit down in a cubicle and check a box—they need to be out seeing their Soldiers while they’re working out and moving around in the hospital. This is an intense engagement with Soldiers and Families on a regular and recurring basis.

★ ★ ★

LIEUTENANT GENERAL ERIC B. SCHOOMAKER

FEBRUARY 25, 2010

WALTER REED ARMY MEDICAL CENTER

CHAPTER ONE

Introduction

RORY A. COOPER, PhD*

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WARRIOR TRANSITION COMMAND

MISSION

The Warrior Transition Command (WTC) provides centralized oversight, guidance, and advocacy empowering wounded, ill, and injured Soldiers, Veterans, and Families through a Comprehensive Transition Plan (CTP) for successful reintegration [back into the force or into the community] with dignity, respect, and self-determination.¹

WARRIOR IN TRANSITION UNIT MISSION

Provide command and control, primary care, and case management for Warriors in Transition (WTs) to establish conditions for healing and promote the timely return to the force or transition to civilian life.¹

WARRIOR ETHOS

I will always place the mission first.

I will never accept defeat.

I will never quit.

I will never leave a fallen comrade.

WARRIOR IN TRANSITION MISSION

I am a Warrior in Transition.

My job is to heal as I transition back to duty or continue
serving the nation as a veteran in my community.

This is not a status, but a mission. I will succeed in this mission because
I AM A WARRIOR AND I AM ARMY STRONG.

TRIAD OF CARE

Each Warrior in Transition (WT) within the WTC receives a “triad of care” consisting of a primary care manager (normally a physician), a nurse case manager, and a squad leader to coordinate and optimize the healing process.

FIVE CORE WARRIOR IN TRANSITION UNIT (WTU)

LEADER FUNCTIONS

1. To strengthen the Soldier in my command.
2. To mitigate the barriers to healing and ultimately success of the Soldiers in my command.
3. To identify resources needed by and issues facing the Soldiers in my command.
4. To treat the Soldiers in my command with empathy, dignity, and respect.
5. To reintegrate the Soldiers in my command back to serving the nation or as successful Veterans.

OPERATIONAL STRESSORS

Each leader within the WTU should be constantly on the lookout for operational stressors that may create barriers to WTs to achieving their mission. Some of the key factors to look for include the following:

- sleep deprivation;
- traumatic stress and situational stressors;
- physical workload; and
- cognitive (mental) burden.

SIX ASPECTS OF TRANSITION: PHYSICAL, EMOTIONAL, SOCIAL, FAMILY, SPIRITUAL, AND CAREER

A key to the successful recovery and reintegration of each WT is to have goals and a plan to achieve them.² To support each WT's return to the force or transition to becoming a successful Veteran, the Army created a systematic framework called the Comprehensive Transition Plan (CTP). The CTP process helps WTs to create a customized recovery process, enabling them to set

and reach their personal goals. Goals are set for each of the six core aspects of transition: (1) physical, (2) emotional, (3) social, (4) family, (5) spiritual, and (6) career.

Each WT is unique and may have different goals for the six core areas. Rehabilitation counselors can help WTs to identify priorities and set goals. It is important when setting goals to have a mix of short-term, medium-term, and long-term goals. WTs are expected to set “SMART” goals in each of these domains—goals that are specific, measurable, attainable, realistic, and time-based. The more specific the goals, the more likely that progress toward them can be measured and the goals ultimately attained.

Physical goals can start as simply as being able to get dressed without assistance and progress toward passing the physical fitness test, and long-term goals may include completing a marathon. Physical goals may be more or less ambitious depending on the wounds, injuries, and illnesses incurred. However, Soldiers and Veterans with very profound injuries have achieved remarkable physical goals such as completing an Iron Man Triathlon or winning a medal in the Paralympic Games.

Emotional goals are important for ensuring the well-being of WTs and their Families. Initial goals may include adjusting to a new self-image and building the confidence to go out in public. Intermediate goals may include expressing love for family and friends and mentoring other WTs less experienced with their wounds, injuries, or illnesses. Long-term goals may include helping other people to succeed despite their disabilities, being emotionally connected to Family and friends, and perhaps reaffirming a relationship with a spouse or finding a life partner.

Social goals are important for reintegrating with the active force and succeeding in the community. Short-term goals may include participating in sports and recreation events for WTs such as the National Disabled Veterans Winter Sports Clinic, the Warrior Games, or the National Disabled Veterans Summer Sports Clinic. These events can help to build physical, emotional, and social confidence. Medium-term goals may include attending a concert, sporting event, or a public social event. Long-term goals may include re-engaging with a military unit, organizing social events, and becoming an active leader in some social aspect of one’s community, for example, coaching a child’s sporting team.

Family is important to everyone. The Army recognizes that many types of Families exist and broadly defines “Family” in terms of goal setting for WTs. Short-term goals may be to hold one’s spouse or significant other again, carry a child, or prepare a meal with a Family member. Medium-term goals may be to spend a holiday with Family and contribute to the festivities. Long-term goals may be to marry and raise a Family, or take one’s Family on a special vacation.

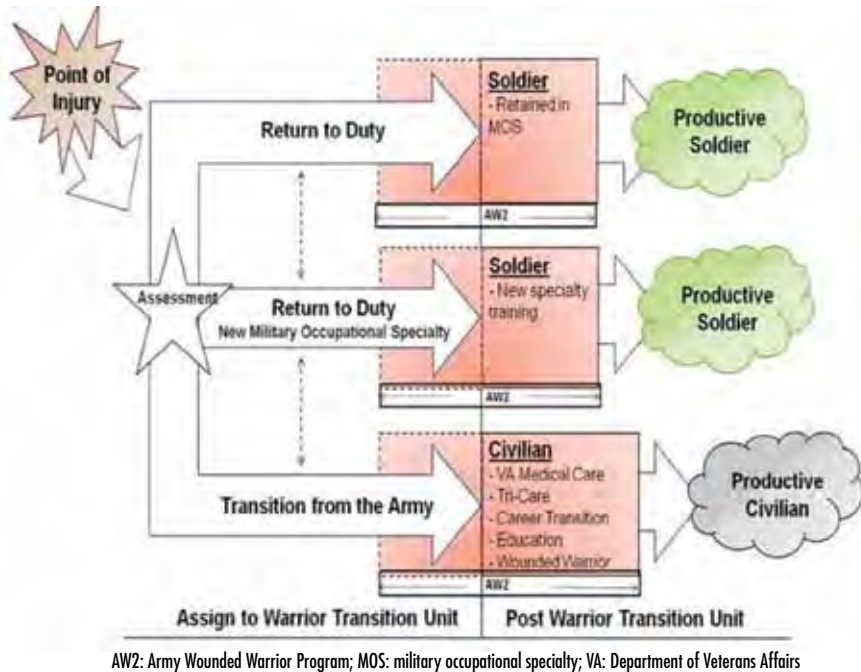
Spirituality is personal and means something different to everyone. For some people a short-term goal may be to attend religious services, for others it may be to experience nature through a camping trip, and for some it may be to connect with fellow Soldiers. A medium-term spiritual goal may be to accept one's impairments and limitations. A long-term goal may be to recognize newly exposed talents and inner strength and to help others to find their own spiritual path.

Career goals vary with each person's interests, abilities, and means. A large number of opportunities are available to help WTs achieve their career goals. Subsequent chapters in this book describe some of the programs available to foster WTs' achievement of a wide range of career goals. Having a productive and satisfying career can affect all other goal areas long term. Short-term career goals may be to participate in an internship experience or a college preparation program. Medium-term goals may include continuing on active duty, completing a job training program, acquiring a job, or graduating from college. Long-term goals may include accomplishments such as being promoted to positions of greater authority in the Army, having a successful civilian career, or becoming a leader in a service organization.

The WTC strives to retain Soldiers as members of the Army's well-trained force and support WTs to continue on active duty whenever possible. In some cases, the Army recognizes that wounds, injuries, or illnesses may require the WT to consider a different military occupational specialty, and sometimes WTs separate from the Army. Regardless of the track the WT pursues, WTU leaders must work to equip WTs with the tools and skills they need to achieve personal life and career goals. Throughout this book are examples of Soldiers from various periods of service who have succeeded in achieving their life and career goals either by continuing on active duty or transitioning to becoming Veterans and contributing to their local communities.

HISTORY AND FUNCTION OF THE WARRIOR TRANSITION COMMAND

The WTC was created on April 9, 2009, and activated in the Pentagon courtyard on May 11, 2009, to provide sole guidance and policy for the Army's WTUs and community-based WTUs.³ Brigadier General Gary H. Cheek was installed as the first commander, and Command Sergeant Major Ly Lac was installed as the Command Sergeant Major of the WTC, a subordinate command of the Army Medical Department (AMEDD). Cheek also served as the Assistant Surgeon General for Warrior Care and Transition. Cheek set three initial priorities for the WTC³:

FIGURE 1-1. *Comprehensive Transition Plan*

1. Implement a CTP (Figure 1-1) for all Soldiers “to get them excited about their future, whether that’s in the Army or out because a Soldier excited about their future is a Soldier who will aggressively pursue their rehab and therapy.”⁴ The CTP helps Soldiers to focus on their future and set positive life and career goals through weekly assessment and reports by local commanders.
2. Work in concert with strategic leaders in the other services to find a new way of taking care of those who have borne the burden of serving the country.
3. Focus on support and education for Families. “The Family is a permanent part of the Soldier and long after the Army is gone, it will be the Family that provides the support and everything else for the Soldier.”⁴

Colonel Darryl Williams became the second commander on August 26, 2010.⁵ Established to provide appropriate support for wounded, ill, and injured Soldiers who are outside of the Army Medical Department primary care and outpatient care, the WTC consolidated three agencies that have long been involved in Army Warrior Care:

1. Warrior Transition Office, previously under the Army Medical Command;
2. Army Wounded Warrior Program (AW2), previously under Human Resources Command; and
3. Warrior Care and Transition Office, previously under the Army Chief of Staff's office.

The WTC is charged with identifying requirements, advocating for resources, directing process improvements, and tracking progress for wounded, ill, and injured Soldiers, Veterans, and their Families. The WTC has the following core warrior care competencies¹:

- act as overall proponent for the Army's Warrior Care and Transition Program;
- ensure execution of Warrior care and AW2 programs for the Army Medical Command commander;
- coordinate with Department of Army staff, other services and departments, and Congress on Warrior care matters;
- evaluate and standardize WTU policies and procedures;
- coordinate WT movement;
- implement the Recovery Coordination Program and CTP; and
- assist WTC and AW2 Soldiers, Veterans, and their Families with career and education opportunities.

The WTC is the culmination of efforts that bring together many different aspects of the Army. All these efforts are joined in one purpose, and that is the Army's commitment to never leave a fallen comrade on the battlefield and never leave a fallen comrade in the hospital or in outpatient care. Since the WTC's beginning, military and community-based WTUs have provided care for wounded, ill, and injured Soldiers and their Families to help them make the transition from the Army into civilian life or to continue on active duty in the Army.

The AW2 assists and advocates for the most severely wounded, ill, and injured Soldiers, Veterans, and their Families, wherever they are located for as long as needed.⁶ The Soldiers and Veterans in AW2 must have served in overseas contingency operations since September 11, 2001 and have—or are expected to receive—an Army disability rating of 30% or greater in one or more specific categories or a combined rating of 50% or greater for conditions that are a result of combat or are combat related. All wounded, injured, and ill Soldiers who are expected to require 6 months or more of rehabilitative care and need complex medical management may be assigned or attached to a WTU to focus on healing before continuing on active duty or transition-

ing to Veteran status. Those who meet AW2 eligibility simultaneously receive a local AW2 advocate to personally assist them long term, whether they continue on active duty or return to their home community as a Veteran.

WTUs were created at Army installations in 2007 to provide personal support for wounded, injured, and ill Soldiers.⁴ The WTUs provide support to wounded, injured, or ill Soldiers who are expected to require 6 months or more of rehabilitative care and need complex medical management. Support is also provided to their Families to promote positive outcomes for the Soldier. Each WTU includes a professional cadre and integrated Army processes, similar to a “line” Army unit, that build on the Army’s strength of unit cohesion and teamwork so that each wounded Soldier can focus on healing to continue on active duty or to successfully transition to Veteran status. Community-based WTUs provide National Guard and Reserve Soldiers an opportunity to heal and undergo rehabilitation closer to home.

CHAIN OF CARE: THEATER TO THE CONTINENTAL US MEDICAL TREATMENT FACILITY

Caring for returning wounded, injured, or ill Soldiers and their Families necessitates flexibility within the Military Health System and the Department of Veterans Affairs (VA). Multiple programs need to be established or upgraded to ensure a well-coordinated system of care to address the needs of wounded, injured, and ill Soldiers and their Families at each critical juncture across the entire continuum of care.

A core function of the AMEDD mission is the treatment of combat casualties. On the battlefield, care begins with basic first aid provided by well-trained nonmedical service members as well as trained combat lifesavers. The Army has established five levels of care for wounded, injured, and ill Soldiers. For minor wounds, injuries, or illnesses, Soldiers are treated and returned to duty. For wounds, injuries, or illnesses not conducive to immediate return to duty, evacuation to the next level of care is warranted. Depending on the nature and extent of the wound, injury, or illness, Soldiers may bypass one or more levels of care to expedite medical intervention. Because of the capability to rapidly evacuate, medical care in theater is limited to life- and limb-saving procedures. Military surgeons focus their attention on stopping and preventing hemorrhage, debriding wounds to prevent infection, and preserving function. Decisions about the course of treatment for severe wounds, injuries, and illnesses are often reserved for care within the continental US treatment areas (Figure 1-2). The levels of care are categorized as follows⁷:

FIGURE 1-2. *Levels of Care*

Pathways from combat support hospitals in Afghanistan and Iraq through the level IV Landstuhl Regional Medical Center to level V centers at Walter Reed National Military Medical Center and Brooke Army Medical Center.

- Level I: Immediate first aid and lifesaving measures are initiated in theater by Army combat medics, Navy corpsmen, and Air Force pararescuemen.
- Level II: This is the first level of care in which surgical resuscitation, basic laboratory, and radiographic capabilities exist. The Army forward surgical team is typically found at this level, together with a medical company with a holding capacity of approximately 72 hours. These medical units are 100% mobile and can provide up to 30 resuscitative surgical operations without resupply. Because of the high mobility of level II medical units, they are assigned to tactical units and are critical in a rapidly moving battlefield.
- Level III: This is the highest level of medical and surgical care available within the combat area of operation. Level III hospitals are modular, allowing adaptability to a given tactical situation. Army level III care is provided at the combat support hospital. In addition to laboratory and radiographic capabilities, the combat support hospital also has a blood bank, a full complement of surgical subspecialties, and physical therapy capabilities.

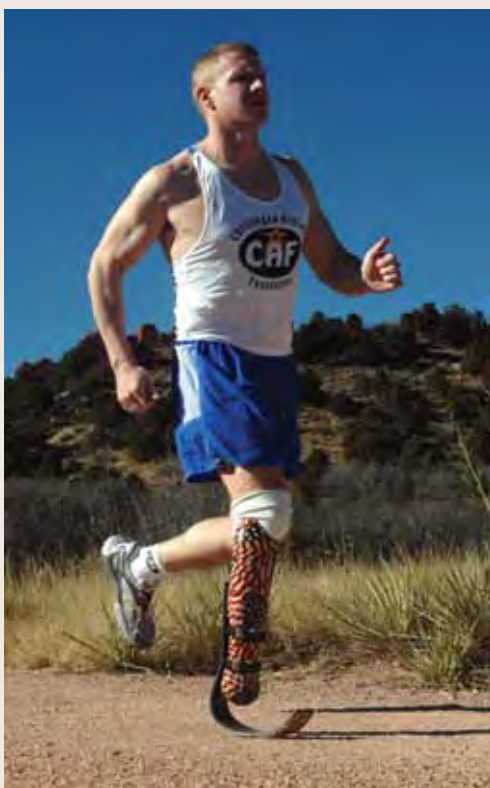
- Level IV: This echelon of care is located outside the combat zone and may be provided by a combat support hospital, a fleet hospital, or a fixed medical facility. During Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF), most level IV care has been provided at Landstuhl Regional Medical Center in Germany. At Landstuhl, wounds, injuries, or illnesses are further assessed and treated. Definitive surgeries or treatments are generally reserved for level V facilities. Patients with severe wounds, injuries, or illnesses are usually held less than 72 hours before proceeding to the next echelon of care. Casualties with less severe wounds, injuries, and illnesses may be able to return to the combat zone from this level.
- Level V: This echelon of care is provided within the continental United States at fixed military medical treatment facilities. Although every effort is made to evacuate wounded, injured, or ill Soldiers to the medical treatment facility closest to their home duty stations, it is more important for Soldiers to be sent to the facility capable of providing the most appropriate care. For example, all burn patients—regardless of military service—are evacuated to the burn center of excellence at Brooke Army Medical Center in San Antonio, Texas. For service members with amputations, centers of excellence have also been established at Walter Reed National Military Medical Center in Bethesda, Maryland, and Balboa Naval Medical Center in San Diego, California, to provide expert care more conducive to Family and service member travel, and be less disruptive of Family life.
- Level VI: This echelon of care primarily refers to rehabilitation units within the VA system of care; however, the relationship between the VA and the Department of Defense continues to evolve with increasing levels of collaboration as more wounded, injured, and ill Soldiers receive care in both systems. Before OIF and OEF the VA had well-established rehabilitation centers for Soldiers with spinal cord injury, brain injury, blindness, and limb amputation. Over the past decade, however, most amputee care being delivered in the VA system involved disease-related amputations such as those seen with vascular disease or diabetes, in contrast to the traumatic amputations in younger service members currently returning from OEF and OIF. This situation, coupled with the desire of some service members to return to active duty following limb amputation, led the Department of Defense to create comprehensive amputee care programs within medical treatment facilities that cooperate with VA care, especially in the areas of long-term care, Veterans' benefits, recreation therapy, and the VA prosthetics and sensory aids service.

SUMMARY

Life with a disability can be fulfilling and may lead one down paths that are interesting, beneficial to humankind, and rewarding. The first steps are frequently difficult and require effort, planning, diligence, and the support of both professionals and Family and friends. The values held by Soldiers who serve as important tools to live by, and Soldiers that have been wounded, injured, or ill previously have shown that while these impairments can be life altering, they do not equate to a lesser quality of life or the end of the opportunity to serve.

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SOLDIERS LIKE MAJOR DAVID ROZELLE are helping to change the culture of the Army. Rozelle demonstrated that despite an amputation below the knee, he is capable of excelling as an Army leader. He deployed to Iraq with the 3rd Armored Cavalry Regiment as part of Operation Iraqi Freedom in April 2003. On June 21, 2003, his vehicle struck a land mine, which resulted in the loss of his right foot. Rozelle completed medical rehabilitation at Walter Reed Army Medical Center and then pushed himself to regain the abilities to continue on active duty. Subsequently, Rozelle has completed two more tours in Iraq: one as a company commander of an

armored cavalry troop, and the second as second-in-command for both an infantry battalion and a cavalry squadron. Rozelle has met all the criteria to take a battalion or squadron command in his career field of armor. Rozelle continues to set the example and serve with distinction, a trailblazer for other Soldiers pursuing their career goals.

Rozelle is always out front; he was the inspiration and organizer for Operation Rebound with Challenged Athletes Foundation and co-founded Vail Veterans Program in Vail, Colorado. He has held several positions of leadership with progressively increasing responsibility. Rozelle served as tank platoon leader, mortar platoon leader, and tank executive officer for 3/66 Armor 4th Infantry Division, Fort Hood, Texas. As a new captain, Rozelle deployed to Kuwait in 1999 as part of Operation Desert Spring as the assistant logistical staff officer with 1st Battalion, 10th Cavalry Regiment, and was then assigned

for a year as the planner at 1st Brigade, 2nd Infantry Division, Camp Casey, Korea. Returning to the United States in 2001, Rozelle was assigned to the 3rd Squadron, 3rd Armored Cavalry Regiment, and served for 9 months as the squadron maintenance officer before taking command of K (“Killer”) Troop in May 2002. On June 17, 2004, Rozelle was assigned command of the Regimental Headquarters and Headquarters Troop (“Remington”) of the 3rd Armored Cavalry Regiment, conducting operations in Baghdad and Tal Afar, Iraq. Rozelle was the first soldier to redeploy to the same battlefield as an amputee in recent military history. From July 2005 to September 2007, Rozelle was assigned to Walter Reed Army Medical Center to oversee the construction of the Military Advanced Training Center. Rozelle completed this tour by spending the final year as the aide-de-camp for the Army Surgeon General, Lieutenant General Eric B. Schoomaker. During the 2008–2009 academic year, Rozelle attended the Marine Command and Staff College at Marine Corps Base in Quantico, Virginia. Rozelle served as the executive officer for Task Force 2-7 Infantry and is currently the executive officer for 5-7 Cavalry Squadron with 1 HBCT, 3rd Infantry Division, at Fort Stewart, Georgia, after redeploying from Baghdad, Iraq, in December 2010 after a year-long tour.

*I saw the fighting spirit of the US military
in full force this week at the Warrior Games. The athletes
celebrated their abilities over their disabilities, embraced their
talents and achieved greatness. I was honored to share this
experience with these incredible athletes.*

★ ★ ★

BRIGADIER GENERAL GARY H. CHEEK
COMMANDING GENERAL, WARRIOR TRANSITION COMMAND
MAY 15, 2010
US OLYMPIC TRAINING CENTER
COLORADO SPRINGS, COLORADO

CHAPTER TWO

The History of the Army Medical Department

RORY A. COOPER, PhD*

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On July 27, 1775, the Continental Congress created a medical service for the nation's 20,000-man army and named Dr. Benjamin Church of Boston as director general and chief physician.¹ Army medicine has actively supported Soldiers at war and during times of peace since its inception. Dr. Benjamin Rush, signer of the Declaration of Independence, ran a Continental Army hospital, and wrote the first American preventive medicine text for Army physicians. A historic first occurred in 1777 when George Washington ordered the inoculation of all Continental Army recruits to prevent smallpox.¹ Following the War of 1812, Congress created a permanent Army medical service in a military reorganization act in 1818.¹ Dr. Joseph Lovell became the Army's first official Surgeon General. Lovell ordered Army surgeons to keep weather records to investigate potential relationships of disease to climate. Initiating nationwide collection of weather eventually led to the creation of the US Weather Bureau.¹ In 1836, Lovell started a collection of medical and scientific books that began the Army Medical Library. It survives as the National Library of Medicine, which is the world's largest medical library.¹ In 1840, the Army Medical Department (AMEDD) published the nation's first nationwide public health statistics.¹ In 1847, Congress autho-

rized medical officers to receive military ranks. As the country moved west, the first Medal of Honor recipient was a young Army doctor named Bernard Irwin, who was awarded for his actions at Apache Pass, Arizona, in 1861.¹ Irwin took command of the troops and pursued Apache raiders led by Cochise. The Medal of Honor was created in 1863, and Irwin received his in 1894. In early 1862, Congress expanded and restructured the AMEDD, promoting the Surgeon General of the Army to general officer rank for the first time. That same year, the Army Medical Museum was created in Washington, DC, which is the precursor to the Armed Forces Institute of Pathology. That same year the AMEDD began compiling a massive five-volume medical history of the Civil War. Jonathan Letterman, medical director of the Army of the Potomac, reorganized medical field supply, a system of forward hospitals, and an AMEDD-controlled ambulance corps. Many of his field hospital and ambulance evacuation concepts remain in use. Dorothea Dix was superintendent of women nurses for the Union Army, and Clara Barton, founder of the American Red Cross, recruited thousands of volunteers.

In 1887, Congress created the Hospital Corps for enlisted men, enabling an AMEDD enlisted career track and replacing earlier practices of borrowing Soldiers from line units.¹ The Hospital Corps was later abolished, and then recreated as the Medical Corps, Medical Nurses Corps, Veterinary Corps, and Medical Service Corps, which continue to this day. Lieutenant Colonel John S. Billings led the Army Medical Museum and Medical Library at the same time, creating the first subject index to world medical literature. He published information on hospital hygiene and made recommendations that led to the creation of the US Public Health Service.¹ In 1889, while at the Census Bureau, he advised Herman Hollerith, who later founded IBM, on the idea of machine-sorted punched cards for recordkeeping.¹ The Army Medical School opened in 1893, and it later became the world-renowned Walter Reed Army Institute of Research. Walter Reed was one of its first teachers as a young officer.¹ Later Major Reed would become world famous for his work on yellow fever and lead a typhoid board, which established the principle that line commanders are responsible for unit sanitation. In 1896, 6 months after Roentgen published his papers on X-ray film, the Army Medical Museum used X-ray film to find a bullet in a Soldier.¹

The Spanish–American War was the first time that US troops crossed an ocean to fight. More than 1,500 experienced, trained female nurses volunteered as civilians for war service, encountering many previously unknown diseases.¹ During the war, the wounded totaled 1,581, whereas typhoid struck 13,770 Soldiers, and malaria, yellow fever, and dysentery struck thousands more.¹ US Army physician Colonel William Gorgas used Reed’s research methods to fight malaria, which made building of the Panama Canal pos-

sible.¹ Gorgas later became Army Surgeon General and in 1918 was awarded the first Distinguished Service Medal. Medical Corps Major General Frederick Ainsworth became Adjutant General of the Army and, based on methods he developed for medical records in the Office of The Surgeon General, transformed the Army's personnel records system. Many of his principles still apply. Major General Leonard Wood, an Army doctor, had earned the Medal of Honor in the Indian Wars, commanded the Rough Riders in the Spanish-American War, was military governor of the Philippines and Cuba, and became Army Chief of Staff.¹ As Chief of Staff he developed the Officer Reserve Corps, based on the Medical Reserve Corps idea.

The 1901 Reorganization Act encouraged more than 200 female nurses to join the Army; however, they still had no military rank.¹ In 1910, Major Carl Darnall devised a way to chlorinate drinking water, which formed the basis of water purification all over the world.¹ During World War I, more than 20,000 women served in the AMEDD, 10,000 of them serving overseas. The first US officer killed was Lieutenant William T. Fitzsimons, a young doctor in a general hospital in France. In 1922, Congress authorized "relative rank," allowing nurses to wear officer insignia, but legally they were still not commissioned officers.¹ In 1908, dentists were incorporated into the AMEDD, leading to a true Dental Corps in 1911, and in 1917 their status, pay, and benefits were equalized with Army doctors.¹ Army veterinarians became responsible for military animals and for the wholesomeness of Army food. During World War I, mortality from battlefield wounds exceeded that of communicable disease for the first time. The motor vehicle ambulance transformed evacuation techniques; however, high death rates of Army pilots initiated the field of aviation medicine.

In 1922, Army dentist Captain Fernando Rodriguez identified the bacteria that caused cavities, thus advancing the foundation for modern preventive dentistry.¹ In the 1930s, Colonel George Callender and Master Sergeant Ralph French discovered that injuries resulting from high-velocity projectiles extend beyond the immediate wound sites, requiring greater surgical debridement markedly to reduce risk of gas gangrene, late infection, and postoperative hemorrhage.¹

World War II produced tremendous medical and surgical advances such as penicillin, which dramatically increased survivability. Clinicians began to develop a better understanding of "shell shock" and "battle fatigue" and discovered the benefits of outpatient care. The need for whole blood, rather than plasma, in surgery was proven. In 1943, Congress authorized the commissioning of female military doctors for wartime service only.¹ The Nurse Corps grew remarkably in size and prestige, peaking at over 57,000, and in 1944 Congress granted nurses temporary commissions with true officer status.¹ In

1947, Colonel Florence A. Blanchfield became the first woman to receive a permanent Army commission.¹ Black physicians, nurses, and medics helped lay the groundwork for the equal opportunity AMEDD of the postwar world. World War II was a story of heroism, service, and sacrifice by 600,000 men and women who served in the AMEDD.¹

In 1947, the Medical Service Corps was created, and the Medical Field Service School moved from Carlisle Barracks, Pennsylvania, to Fort Sam Houston, Texas, and grew into the AMEDD Center and School.¹ During the Korean War, weather was significant, and AMEDD research teams studied cold injuries and the effect of protective clothing. Amputations were reduced through advances in vascular surgery, and an artificial kidney was taken to the war zone to save Soldiers from renal failure. In 1951, the first helicopter ambulance unit began operations in Korea, transporting more than 17,000 wounded Soldiers to a sterile, fully equipped hospital in minutes by war's end in 1953.¹

In 1966, MUST (medical unit, self-contained, transportable) portable hospital units that could be moved by truck or aircraft arrived in Vietnam and improved the efficiency and speed that care could be delivered.¹ The inflatable rubber medical care facility had its own electrical power, air conditioning, heating, water supply, and waste disposal system. Colonel Janice Mendelson was part of the team at the US Army Institute of Surgical Research at Brooke Army Medical Center, Texas, that created Sulfamylon (Mylan Pharmaceuticals, Morgantown, WV), an antibacterial cream that resulted in a 50% reduction in burn fatalities resulting from infection.¹ Advanced procedures in physical medicine and rehabilitation and physical and occupational therapy were used to help Soldiers with serious wounds, injuries, or illnesses. In 1970, Anna Mae V. Hays, Army Nurse Corps Chief, was the first woman promoted to brigadier general.¹ In 1983, AMEDD hospitals treated patients from the bombing of a Marine barracks in Beirut, and later they cared for casualties from Operation Urgent Fury in Grenada.¹

In 1989, the Berlin Wall fell and the United States sought a peace dividend, but there was more work for AMEDD. In December 1989, AMEDD supported Operation Just Cause in Panama, with 58 clinicians deployed, and some wounded Soldiers were evacuated directly from the battlefield to Army hospitals in the United States.¹ In August 1990, Army Medicine responded to Operation Desert Shield, processing deploying troops and sending 4,000 AMEDD personnel overseas.¹ Some of them staffed medical units deploying to the Persian Gulf region, while others served in Europe to replace staff sent to the region. During 1993 and 1994, AMEDD personnel supported Operation Restore Hope along with American troops in Somalia.¹

The world changed on September 11, 2001, when Islamic extremists crashed hijacked commercial airliners into the World Trade Center in New York City, into the Pentagon, and over rural Pennsylvania. Military operations were initiated in Afghanistan on October 7, 2001 (Operation Enduring Freedom [OEF]), followed by the invasion of Iraq on March 19, 2003 (Operation Iraqi Freedom [OIF]).² Conducting war against terrorism has proven extremely challenging for US military forces and costly for service members and their Families. Thousands of young Americans' lives have been lost and even more have sustained serious physical, emotional, and psychological injury, although advances in military medicine have contributed greatly to reducing morbidity and mortality. AMEDD personnel began caring for service members from both theaters of war as soon as combat operations began in Afghanistan and Iraq. AMEDD has treated more than 61,000 Soldiers, and more than 85% of those Soldiers have completed the transition back to active duty from both operations.^{3,4} Thousands of AMEDD personnel have served in OEF and OIF, while supporting US Soldiers and their Families around the world. Army medical care and medics have made significant contributions during OEF and OIF to assure American Soldiers that if injured or wounded in the course of fighting, they have excellent chances of surviving their wounds, returning to their homes and Families, recovering as much ability and function as possible, and returning to serve as a Soldier or work as a civilian. To maximize the potential of wounded, injured, and ill Soldiers, Lieutenant General Eric B. Schoomaker, AMEDD Commander and The Surgeon General, with the support of General George Casey, Jr., Chief of Staff of the Army, championed the creation of the WTC, and nominated Brigadier General Gary Cheek as the first commander. Cheek was selected in part for his combat experience and his prior experience with Soldiers in the combat arms as an artillery officer.

SUMMARY

The AMEDD has much to be proud of and has adapted to rapid changes in warfare that have necessitated transformation of medical care throughout its history. The work of the thousands of Soldiers who have served within the AMEDD during the past decade in theater has brought world class medical care to the battlefield while setting new standards for medical care, rehabilitation, continuation on active duty, and community reintegration.

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SINCE CHILDHOOD, ATHLETICS HAVE BEEN JOHN REGISTER'S PASSION. He began swimming competitively at the Oak Park, Illinois YMCA, and then moved on to baseball, football, and eventually track and field. While attending the University of Arkansas, he became a three-time All-American, once in the NCAA long jump and twice on the 4 x 400-meter relay teams. Upon completing a bachelor's degree in communications in 1988, Register enlisted in the US Army, serving from 1988 to 1994.

A Desert Shield and Desert Storm Veteran, he continued to pursue athletic excellence in the Army's World Class Athlete Program and won nine gold medals in Armed Services Competition.

In 1988, Register qualified for the Olympic trials in the 110-meter hurdles; he again qualified in the 400-meter hurdles in 1992. With these accomplishments, he seemed destined to compete as a member of the 1996 Olympic Team. But on May 17, 1994, his life would be forever altered with one misstep over the hurdle. A faulty landing hyper-extended Register's left knee, resulting in an injury severing the popliteal artery. An attempt to reconstruct the artery using a vein from his right leg failed; within days, gangrene turned the muscle black and amputation was suggested. Although devastating, the injury did not stop him. With a strong faith in Christ and the support of his wife Alice, he chose amputation. Through the use a prosthesis, he would walk again—and eventually run.

During his long journey to recovery, Register began using sports as a conduit to rehabilitation. He began swimming for cardiovascular fitness. After only 18 months of rehabilitation and training, he qualified for and made the 1996 Paralympic Team as a swimmer, competing in the games in Atlanta, Georgia. In addition to qualification for the Paralympics, he competed in the finals of the 4 x 400-meter medley relay, swimming the anchor.

After observing athletes with one leg competing in track during the 1996 Paralympics, Register was fitted with a running prosthesis and set a goal

of competing in track and field at the 2000 Paralympic Games in Sydney, Australia. Two years after taking his first running step, he earned the Silver Medal in the long jump at the 2000 Paralympic Games, setting the American long jump record with a distance of 5.41 meters (18.4 feet). He also sprinted to fifth place in both the 100-meter and 200-meter dashes.

After his 1994 amputation, Register remained active with Soldiers, first as a civilian employee of the Army working as a sports specialist with the World Class Athlete Program. He worked as a program specialist with the US Army BOSS (Better Opportunities for Single Soldiers) Program at the Community and Family Support Center Headquarters. In 2003, he took a job with the US Olympic Committee (USOC) and now manages the Paralympic Academy Youth Outreach Program, as well as directs the USOC's Paralympic Military Programs (a program for service members who return from conflict with physical disabilities).

*There are those who speak about you and say,
'he lost an arm, he lost a leg, she lost her sight . . .'*
*I object. You gave your arm, you gave your leg, you gave your
sight. As gifts to your nation. That we might live in freedom.
Thank you. And to your families. Families of the fallen and
families of the wounded. You sacrifice in ways that those of us
who have not walked in your shoes can only imagine.*

★ ★ ★

GENERAL PETER PACE
CHAIRMAN, JOINT CHIEFS OF STAFF
BROOKE ARMY MEDICAL CENTER
DEDICATION OF THE INTREPID CENTER
JANUARY 2007

CHAPTER THREE

The History of Disability Rights and Military Conflict

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INTRODUCTION

“**I**t’s a great time to be disabled,” said one woman with an acquired spinal cord injury.¹ No longer is the goal only to keep civilians and military personnel returning from wars alive after a severe medical event: the goal is expanded to return them to a quality of life that is as close as possible to their own life objectives. This chapter tells a story of progress in attaining quality of life for civilians and military personnel with disabilities in the United States. As science, technology, and medicine advance, so do the expectations of people with disabilities. Once viewed as invalids, people with disabilities are now leaders in efforts for community integration and equal opportunity in education, and employment.

From the time when the Declaration of Independence declared Americans free in 1776 and through two world wars in the 20th century, disability was

approached using a medical model. People with disabilities were considered dependent patients who would always need to be cared for by professionals. Often viewed as incapable of working, and in the absence of vocational rehabilitation programs, few people were employed after injury or onset of disabling condition. Fueled by a post–World War II social revolution, Veterans and polio survivors—and later civil rights activists—brought real change during the 20th century. In the mid-20th century, with the emergence of the disability civil rights movement, a new social and integrative model emerged that approached people with disabilities in much the same way as other citizens.^{2,3} The model assumed that body functions and structures, activities and participation, and the environment dynamically interacted with each other. Depending on factors such as access to healthcare, housing, employment and education programs, buildings, transportation, and communications, individual outcomes dramatically changed. People became sufficiently supported so that disability was no longer a dominant issue in their functioning and social participation.

This chapter provides a brief chronicle of the disability experience in the United States, both military and civilian. It begins when the United States was a group of colonies, moves through the Revolutionary War, and on to the modern period of conflict in Iraq and Afghanistan. War and—in the absence of antibiotics—disease have had a major impact on types and prevalence of disability. The chapter is organized chronologically and uses wars as major milestones. Breakthroughs in science, technology, and medicine and important federal legislation, benefits, and services are highlighted. This is the story of progress: how men and women with disabilities, military and civilian, and their supporters have enhanced the quality of life for all US citizens.

PLYMOUTH COLONY, AMERICAN REVOLUTIONARY WAR, WAR OF 1812, CIVIL WAR, AND WORLD WAR I

CHARACTERISTICS OF PEOPLE WITH DISABILITIES

The US system of services for Veterans can trace its roots to 1636 when the pilgrims of Plymouth Colony fought the Pequot Indians.⁴ Even in those days, the US military reflected its future diversity. In the American Revolutionary War of 1775–1783, women served on the battlefield as nurses and performed other jobs, but the military was mainly composed of men.⁵ During the Civil War of 1861–1865, approximately 180,000 African Americans served in the Union Army.⁶ During the American Revolution, more Soldiers died from illness than from combat.⁷ In the Civil War, this trend continued; many Soldiers succumbed to infection, often after amputation, and made

worse by the lack of cleanliness in the camps.⁸ This limited state in medicine continued up to World War I.⁷ In World War I (1914–1918), military science had advanced to include clouds of gas that could kill or wound thousands in minutes, machine guns, and new forms of technologies.⁷ The death rate from disease was lower and the death rate from battle was higher than in previous wars in which Americans served. Inoculation, clean camps, and safe drinking water nearly eliminated typhoid fever among US troops.⁹

Information about the prevalence of disability in the US population during this period is not widely available. However, as the section on legislation, benefits, and programs will show, activities were underway to improve the lives of those who were blind and deaf and those who had mobility, cognitive, and mental disabilities. Some well-intentioned reformers generated ill-conceived policies that led to widespread institutionalization, while others led to reforms, such as progressive benefits for Veterans.

SCIENCE, TECHNOLOGY, AND MEDICINE

A number of advances would eventually lead to improvements in the quality of life for people with disabilities. In 1812, Benjamin Rush, MD, was far ahead of his time in the treatment of mental illness. He classified different forms of mental illness and theorized as to their causes and cures.¹⁰ A few years later, the first plastic surgery was performed in England and the stethoscope was invented.¹¹ In 1829, Louis Braille invented the raised point alphabet that has come to be known as Braille.¹¹ In 1847, antiseptics were invented.¹¹ Physicians and rehabilitation engineering shared a milestone when, in 1915, a physician, Ferdinand Sauerbruch, worked with an engineer to design an artificial arm.¹² The poliomyelitis epidemic in the 1920s through the 1950s promoted the profession of physical therapy.¹³ Franklin Delano Roosevelt cofounded the Warm Springs Foundation in Georgia, a model rehabilitation and peer counseling program.¹⁴ Rehabilitation medicine was beginning a rapid pace of development. One of the first departments of Physical Medicine and Rehabilitation was opened in 1936 at the Mayo Clinic.¹⁵ In 1937, Herbert A. Everest and Harry C. Jennings patented a design for a folding wheelchair with an X-frame that could be packed into a car trunk.^{16,17}

LEGISLATION, BENEFITS, AND PROGRAMS

As early as 1636, those who fought and were injured in wars were recognized as deserving of benefits. The Plymouth Colony passed a law to support Soldiers with disabilities.⁴ In 1862, with the passage of the Civil War Pension Law, the first national policy of compensation for Soldiers and Veterans with certain disabilities was set into motion.¹⁸ State Veterans' homes established after the Civil War served as the roots of the US Department of Veterans

Affairs.⁴ The US Congress devised a system of Veterans' benefits in 1917, including programs such as disability compensation, health insurance, and vocational rehabilitation. In 1918, Congress passed a law in support of the first major vocational rehabilitation program for Soldiers.⁴ A new approach was emerging with the recognition that many injured Warriors were not patients for a lifetime but could return to work.

Many important laws, benefits, and programs were also established for civilians with disabilities. Reformers established the first hospital for people with mental illness in 1773.¹⁹ In the mid-1800s, reformers such as Dorothea Dix and Horace Mann imported from Europe the idea that mental illness could be treated and many hospitals were opened.²⁰ In 1890, the Disability Pension Act provided payments for physical and mental disabilities based on a person's incapacity to work.²¹ In 1930, the US Public Health Service established a division that would later bring together research and treatment programs to combat drug addiction, and study the causes, prevalence, and means of preventing and treating nervous and mental disease.²² Industrial accidents also became the subject of legislation. In 1911, Wisconsin was the first state to adopt a law, and by 1948, every state had some form of Workmen's Compensation.²³ Like disabled military personnel, civilians with disabilities began to receive the benefits of vocational rehabilitation with the passage of the Vocational Rehabilitation Act in 1920.^{24,25} The landmark Social Security Act of 1935 provided an income safety net to older adults and others.²⁶

WORLD WAR II, KOREAN WAR, VIETNAM WAR, PERSIAN GULF WAR, IRAQ, AND AFGHANISTAN

The period from 1939 to the present is a chronicle of rapid change in science, warfare technology, and disability-related legislation and programs. People with disabilities found their own voices so that professionals alone were not the only chroniclers of the disability experience.

CHARACTERISTICS OF PEOPLE WITH DISABILITIES

During World War II, the US military continued to become more diverse. Before the war, only 3,640 African Americans served, but this number swelled to 467,833 after the attack on Pearl Harbor.²⁷ Increasing numbers of Hispanic Americans served as did Native Americans, whose ability to transmit military messages using code was particularly useful.²⁸ More than 74,000 women served as Army and Navy nurses.⁵ World War II was the first war in which more battle-related deaths occurred than deaths from

other causes such as accidents, disease, and infection.²⁹ The new nature of combat, from trench warfare in World War I to mobility in World War II, changed the type of wounds sustained.³⁰ Thermal injuries began to receive more attention from military medicine. Attention to this problem continued into the Korean, Vietnam, Iraqi, and Afghanistan wars because military personnel experienced intense cold or heat.³¹ In 20th century military conflicts such as Vietnam, attention to combat-related injuries increased and became more focused.³⁰ Prevalence of traumatic brain injury significantly increased. Operations in Iraq and Afghanistan placed tremendous strain on military personnel and their families. Increased emphasis has been placed on mental health issues associated with traumatic brain injury, posttraumatic stress disorder, suicides, and assaults on female personnel.³² These challenges led to greater emphasis on planning for improved outcomes. To ensure optimal treatment and rehabilitation of combat-related amputees, in 2007 the medical and rehabilitation community began to develop a “road map” to provide a focus of efforts and priorities.³⁰ With a goal of community reintegration—whether into the military or civilian sector—recommendations emphasized outcomes research, rehabilitation and therapeutic interventions, and medical and technological advancements.

Changes have also occurred in the profile of disability among US civilians. Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), like many infectious diseases, has shifted from the mortality statistical category to morbidity. Chronic illness, such as HIV/AIDS, mental illness, arthritis, and diabetes are major generators of functional limitations that may lead to disability. The poliomyelitis epidemic peaked in the 1950s and left a large population of otherwise healthy individuals with disabilities. Some of these individuals, such as Ed Roberts, Justin Dart, and Judith Heumann, became the leaders of the disability civil rights movement.^{2,33} They argued that society created disability by designing and implementing inaccessible programs, transportation, buildings, information, and communications.

SCIENCE, TECHNOLOGY, AND MEDICINE

The pace of progress in science, technology, and medicine rapidly increased during this period. In the 1940s, new medications such as penicillin became available as did lithium, which was used for the treatment of bipolar disorder.^{22,34} Dr. William Menninger, chief of Army neuropsychiatry, called for action pointing to the need to study the causes, treatment, and prevention of mental illness. Antipsychotic drugs began to be marketed in the 1950s. In 1954, Dr. Jonas Salk developed the first vaccine against polio, and in 1961 Dr. Albert Sabin developed an oral vaccine.³⁵ The professional literature

starting with the psychiatric rehabilitation movement began to incorporate the concept of recovery from the early 1990s.²²

Rehabilitation took giant steps forward.³⁶ Dr. Howard Rusk was central to popularizing a holistic approach, rather than treating only medical conditions of injured World War II military personnel, and later civilians. In 1946, he wrote an article about injured Veterans' involvement in sports that continues to advance in the 21st century.³⁷ In 1948, Dr. Rusk founded the Rusk Institute for Rehabilitation Medicine in New York City, where he developed technologies to improve the health of injured veterans.³⁸ Staff at the institute, including those with disabilities, began work on inventions such as electric typewriters, mouth sticks, and improved prosthetics as adaptive aids for people with severe disabilities. In 1945, the National Research Council Committee on Prosthetic Devices emerged to become the basis for federal funding for prosthetics and ultimately for rehabilitation engineering.³⁹ Inventions also eased barriers to use of the telephone and television. In 1964, Robert H. Weitbrecht, a deaf man, invented an acoustic coupler that made possible the widespread use of teletypewriters, or TDDs, for the deaf, providing deaf and hard of hearing access to the telephone system.⁴⁰ In 1975, the Federal Communications Commission authorized line 21 on television for closed captions.⁴¹ In 1979, the Quickie lightweight folding wheelchair (Southwestmedical.com, Phoenix, AZ) went into production.⁴² An ultra-light wheelchair revolution began in the 1980's, led by wheelchair users such as Marilyn Hamilton, Jeff Minibraker, Bob Hall, Jim Martinson, and Rory Cooper, who helped create wheelchairs that transformed the lives of people with disabilities.

First begun in 1980, the Veterans Administration's National Recreational Therapy programs encouraged the use of sports in the rehabilitation of Veterans.⁴³ The National Veterans Wheelchair Games, a result of the VA's National Recreational Therapy programs, represents the largest annual wheelchair sports event in the world. For example, the 2010 Games saw 583 wheelchair athletes from 45 states competing in wheelchair rugby, field and track events, swimming, fencing, and other events.⁴³ A strong sense of camaraderie and identity among the hundreds of Veterans who choose to participate demonstrate some of the many benefits derived from these games.⁴⁴⁻⁴⁷ As the 20th century ended and the 21st century arrived, the trend in Veteran involvement in sports was increasingly evident. Established in 1987, the National Disabled Veterans Winter Sports Clinic introduces Veterans with amputations, spinal cord injuries or disease, neurological conditions, or blindness to adaptive sports and recreational activities such as Alpine and Nordic skiing, and rock climbing.⁴⁸ The Wounded Warrior Disabled Sports Project began in 2003, focusing predominantly on Veterans

with disabilities from the wars in Iraq and Afghanistan.⁴⁹ These efforts again reflect a shift from medicalized efforts for rehabilitation and community reintegration to mainstream models—in this case, sports.

The 20th century was characterized by inventions that contributed to enhanced health, function, and participation of many citizens.⁵⁰ In the late 1970s, the first cochlear implant was tested, a device that would assist in the restoration of hearing among a certain spectrum of persons who were deaf. In 1981, magnetic resonance imaging was put on the market, permitting less invasive and more exact diagnosis of medical conditions and illnesses that could lead to disability. In 1985, Microsoft released Windows 1.0, and in 1999 handheld computer technology leapt forward with the Palm VII. Personal computing has led to a revolution in assistive technology, such as augmentative alternative communication devices, power wheelchair controllers, or word prediction programs as well as text-to-speech software to open communication and mobility of individuals with disabilities. In 1990, researchers began the Human Genome Project. In 1991, CERN (European Organization for Nuclear Research) released World Wide Web software. The World-Wide Web has led to social networking, shopping and educational opportunities previously not available to persons with disabilities.

LEGISLATION, BENEFITS, AND PROGRAMS

Increasing numbers of people with disabilities not only survived trauma but regarded themselves as healthy, functioning individuals. They were instrumental in the passage of legislation across disabilities that would provide them with access to what most other people took for granted, such as using public transportation and entering and accessing university buildings and classrooms. The Servicemen's Readjustment Act of 1944—commonly known as the GI Bill of Rights—provided returning World War II Veterans' funds for college education, unemployment insurance, and housing.⁵¹ In 1948, Representative Edith Rogers pushed through a law that provided for the development of artificial legs and arms, hearing aids, and aids to those who are blind.⁵² The Veterans Administration was charged with establishing the rehabilitation research and development program that would administer the law. In 1989, the Veterans Administration became a Cabinet-level unit and was renamed the Department of Veterans Affairs.⁴ In 1994, the Uniformed Services Employment and Reemployment Rights Act was adopted.⁵³ In the first decade of the 21st century, the pace of legislation for Veterans again increased. The Veterans Disability Protection Act was passed, and programs emerged that provided more support for those with traumatic brain injury and posttraumatic stress disorder.

On the civilian side, a series of legislation, benefits, and programs was adopted that revolutionized the lives of people with disabilities. The first wave focused on professional services and income supports, whereas the second wave focused on civil rights. In 1946, President Harry Truman signed the National Mental Health Act, creating a significant amount of funding for psychiatric education and research, leading to the creation in 1949 of the National Institute of Mental Health.²² In 1956, Congress passed the Social Security amendments that created Social Security Disability Insurance for workers with disabilities.⁵⁴ In 1965, the Medicare and Medicaid amendments were enacted.⁵⁴ In 1971, the first rehabilitation engineering centers were funded at Rancho Los Amigos Medical Center in California and Moss Rehabilitation Hospital in Philadelphia.⁵⁵ In 1978, the National Institute on Disability and Rehabilitation Research was created as the National Institute on Handicapped Research.⁵⁵ In 1990, the National Center for Medical Rehabilitation Research was established within the National Institutes of Health. In one of the most important decisions leading to community-based services, in 1981 legislation created a waiver program that allows states to use Medicaid long-term care money to pay for home-based services instead of nursing homes and institutional care.⁵⁶

Several disability-led organizations provided energy for the eventual comprehensive network of disability civil rights legislation organized by the disability rights movement. In 1940, the American Federation of Physically Disabled was the first cross-disability organization to urge an end to job discrimination.⁵⁷ In 1955, Howard Wilke, a man without arms who wrote using his toes, became the founder and director of the Commission on Religion and Health. He worked to open religious life and the ministry to women and people with disabilities.⁵⁸ Spurred on by the passage of the Civil Rights Act of 1965, the 1960s and 1970s were periods of increased disability activism by organizations such as the Atlantis Community, later ADAPT, which tried to keep people out of nursing homes by securing accessible housing.⁵⁹ The Disability Rights Education Fund was established in 1979 as a premier advocate of disability rights.⁶⁰ Judy Heumann founded Disabled in Action after her successful employment discrimination suit against the New York City School system to pursue a broad range of issues including education and employment.⁶¹ Later she, along with Ed Roberts in California, was one of the leaders in the establishment of the first independent living centers. The centers, led by people with disabilities, provided services such as peer counseling, advocacy services, van transportation, training in independent living skills, wheelchair repair, housing referral, and attendant care referral—among others—to people who had experienced serious medical events such as accidents and onset of serious conditions. The independent

living centers continue to serve as an advocacy core for the disability rights movement. Heumann was also involved in a number of well-publicized protests.⁶²

One of the most widely recognized and publicized protests was the many sit-ins at 10 Department of Health, Education, and Welfare buildings around the nation on April 5, 1977.⁶³ The two most noteworthy protests occurred in San Francisco and Washington, DC. The protesters demanded the signing of regulations for Section 504 of the Rehabilitation Act of 1973. Another significant protest related to disability rights was the Deaf President Now protest of Gallaudet University students in Washington, DC, in March 1988.⁶⁴ The 8-day demonstration and occupation and lock-out of the school began when the board of trustees appointed a new hearing president, Elisabeth Zinser, over two deaf candidates.

As Exhibit 3-1 shows, a heavy flow of disability-related civil rights legislation was enacted between 1970 and 1996.⁶⁴ The Architectural Barriers Act in 1968 was a milestone in the continuing journey to make buildings, information, and communication systems accessible.⁶⁴ In 1973, Section 504 of the Rehabilitation Act was the first national legislative foray into civil rights for people with disabilities. Section 504 states that no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under any program or activity that either receives federal financial assistance or is conducted by any executive agency or the US Postal Service.⁶⁴ Children with disabilities—some of whom never went to school—now were explicitly accorded the right to a free appropriate education in the least restrictive environment. The Americans with Disabilities Act of 1990 is the flagship of the disability legislative fleet.⁶⁴ The Americans with Disabilities Act applies to both the public and private sectors and prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. Other legislation such as the Air Carrier Access Act, Fair Housing, Technology Related Assistance, and the National Voters Registration Act targeted particular previously insurmountable barriers.⁶⁴ *Olmstead v. L.C.* is one of the most significant court decisions. In this case, the Supreme Court ruled that unnecessary institutionalization of people with disabilities constitutes discrimination and violates the Americans with Disabilities Act.⁶⁵ People with disabilities must receive benefits in the most integrated setting appropriate to their needs.

EXHIBIT 3-1. *Disability-related Civil Rights Legislation Enacted between 1970 and 1996*

AMERICAN WITH DISABILITIES ACT, 1990

The Americans with Disabilities Act (ADA) prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications. It also applies to the US Congress. To be protected by the ADA, one must have a disability or have a relationship or association with an individual with a disability. An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such impairment, or a person who is perceived by others as having such impairment. The ADA does not specifically name all of the impairments that are covered.

Contact: ADA Information Line
(800) 514-0301 (voice)
(800) 514-0383 (TTY)
www.ada.gov

Title I:
Employment

Title I requires employers with 15 or more employees to provide qualified individuals with disabilities an equal opportunity to benefit from the full range of employment-related opportunities available to others. For example, it prohibits discrimination in recruitment, hiring, promotions, training, pay, social activities, and other privileges of employment. It restricts questions that can be asked about an applicant's disability before a job offer is made, and it requires that employers make reasonable accommodations to the known physical or mental limitations of otherwise qualified individuals with disabilities, unless it results in undue hardship. Religious entities with 15 or more employees are covered under Title I.

Contact: For the EEOC field office in a geographic area, contact:
(800) 669-4000 (voice)
(800) 669-6820 (TTY)
www.eeoc.gov

Publications and information on EEOC-enforced laws may be obtained by calling:
(800) 669-3362 (voice)
(800) 800-3302 (TTY)

For information on how to accommodate a specific individual with a disability, contact the Job Accommodation Network at:
(800) 526-7234 (voice/TTY)
www.jan.wvu.edu

Title II:
State and Local
Government
Activities

Title II covers all activities of state and local governments regardless of the government entity's size or receipt of federal funding. Title II requires that state and local governments provide people with disabilities an equal opportunity to benefit from all of their programs, services, and activities (eg, public education, employment, transportation, recreation, healthcare, social services, courts, voting, and town meetings).

Contact: US Department of Justice
 Civil Rights Division
 950 Pennsylvania Avenue, NW
 Disability Rights Section—NYAV
 Washington, DC 20530
www.ada.gov
 (800) 514-0301 (voice)
 (800) 514-0383 (TTY)

Title III:
 Public
 Transportation

Title III covers public transportation services, such as city buses and public rail transit (eg, subways, commuter rails, Amtrak). Public transportation authorities may not discriminate against people with disabilities in the provision of their services. They must comply with requirements for accessibility in newly purchased vehicles, make good faith efforts to purchase or lease accessible used buses, remanufacture buses in an accessible manner, and, unless it would result in an undue burden, provide paratransit where they operate fixed-route bus or rail systems. Paratransit is a service where individuals who are unable to use the regular transit system independently (because of a physical or mental impairment) are picked up and dropped off at their destinations.

Contact: Office of Civil Rights
 Federal Transit Administration
 US Department of Transportation
 400 Seventh St., SW, Room 9102
 Washington, DC 20590
www.fta.dot.gov/ada
 (888) 446-4511 (voice/relay)

Title IV:
 Public
 Accommodations

Title IV covers businesses and nonprofit service providers that are public accommodations, privately operated entities offering certain types of courses and examinations, privately operated transportation, and commercial facilities. Public accommodations are private entities who own, lease, lease to, or operate facilities such as restaurants, retail stores, hotels, movie theaters, private schools, convention centers, doctors' offices, homeless shelters, transportation depots, zoos, funeral homes, day care centers, and recreation facilities including sports stadiums and fitness clubs. Transportation services provided by private entities are also covered by Title III.

Public accommodations must comply with basic nondiscrimination requirements that prohibit exclusion, segregation, and unequal treatment. They also must comply with specific requirements related to architectural standards for new and altered buildings; reasonable modifications to policies, practices, and procedures; effective communication with people with hearing, vision, or speech disabilities; and other access requirements. Public accommodations must also remove barriers in existing buildings where it is easy to do so without much difficulty or expense, given the public accommodation's resources.

Contact: US Department of Justice
 Civil Rights Division
 950 Pennsylvania Avenue, NW
 Disability Rights Section—NYAV
 Washington, DC 20530
www.ada.gov
 (800) 514-0301 (voice)
 (800) 514-0383 (TTY)

Title V:
Telecommu-
nications Relay
Service

Title V addresses telephone and television access for people with hearing and speech disabilities. It requires common carriers (telephone companies) to establish interstate and intrastate telecommunications relay services (TRS) 24 hours a day, 7 days a week. TRS enables callers with hearing and speech disabilities who use telecommunications devices for the deaf (TDDs), which are also known as teletypewriters (TTYs), and callers who use voice telephones to communicate with each other through a third party communications assistant. The Federal Communications Commission (FCC) has set minimum standards for TRS services. Title IV also requires closed captioning of federally funded public service announcements.

Contact: Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
www.fcc.gov/cgb/dro
(888) 225-5322 (Voice)
(888) 835-5322 (TTY)

ADA AMENDMENTS ACT (ADAAA), 2008

The ADA Amendments Act of 2008 (Public Law 110-325, ADAA) is an Act of Congress, effective January 1, 2009, that amended the Americans with Disabilities Act of 1990 (ADA), and other disability nondiscrimination laws at the federal level of the United States. The ADAA was a response to a number of decisions by the Supreme Court that had interpreted the original text of the ADA as limiting the rights of person with disabilities. Thus, the ADAA explicitly reversed those decisions, and changed the definition of the term "disability," clarifying and broadening that definition, and therefore the number and types of persons who are protected under the ADA and other federal disability nondiscrimination laws. (Source: http://en.wikipedia.org/wiki/ADA_Amendments_Act_of_2008)

TELECOMMUNICATIONS ACT, 1996

This act requires manufacturers of telecommunications equipment and providers of telecommunications services to ensure that such equipment and services are accessible to and usable by persons with disabilities, if readily achievable. These amendments ensure that people with disabilities will have access to a broad range of products and services such as telephones, cell phones, pagers, call-waiting, and operator services, which were often inaccessible to many users with disabilities.

Contact: Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
www.fcc.gov/cgb/dro
(888) 225-5322 (Voice)
(888) 835-5322 (TTY)

FAIR HOUSING ACT, 1988

This act, as amended in 1988, prohibits housing discrimination on the basis of race, color, religion, sex, disability, familial status, and national origin. Its coverage includes private housing, housing that receives federal financial assistance, and state and local government housing. It is unlawful to discrimi-

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nate in any aspect of selling or renting housing or to deny a dwelling to a buyer or renter because of the disability of that individual, an individual associated with the buyer or renter, or an individual who intends to live in the residence. Other covered activities include, for example, financing, zoning practices, new construction design, and advertising.

The Fair Housing Act requires owners of housing facilities to make reasonable exceptions in their policies and operations to afford people with disabilities equal housing opportunities. For example, a landlord with a “no pets” policy may be required to grant an exception to this rule and allow an individual who is blind to keep a guide dog in the residence. The Fair Housing Act also requires landlords to allow tenants with disabilities to make reasonable access-related modifications to their private living space, as well as to common use spaces.

Contact: Office of Program Compliance & Disability Rights,
Office of Fair Housing and Equal Opportunity
US Department of Housing and Urban Development
451 7th Street, SW, Room 5242
Washington, DC 20410
www.hud.gov/offices/ftheo
(800) 669-9777 (voice)
(800) 927-9275 (TTY)
For questions on the provisions of the Fair Housing Act,
contact Fair Housing FIRST at: www.fairhousingfirst.org
(888) 341-7781 (voice/TTY)

AIR CARRIER ACCESS ACT, 1984

This prohibits discrimination in air transportation by domestic and foreign air carriers against qualified individuals with physical or mental impairments. It applies only to air carriers that provide regularly scheduled services for hire to the public. Requirements address a wide range of issues including boarding assistance and certain accessibility features in newly built aircraft and new or altered airport facilities. People may enforce rights under the Air Carrier Access Act by filing a complaint with the US Department of Transportation, or by bringing a lawsuit in federal court.

Contact: Aviation Consumer Protection Division
US Department of Transportation
400 Seventh Street, SW, Room 4107, C-75
Washington, DC 20590
airconsumer.ost.dot.gov
(202) 366-2220 (voice)
(202) 366-0511 (TTY)
(800) 778-4838 (voice)
(800) 455-9880 (TTY)

THE VOTING ACCESSIBILITY FOR THE ELDERLY AND HANDICAPPED ACT OF 1984

This act generally requires polling places across the United States to be physically accessible to people with disabilities for federal elections. Where no accessible location is available to serve as a polling place, a political subdivision must provide an alternate means of casting a ballot on the day of the election. This law also requires states to make available registration and voting aids for disabled and elderly voters, including information by TDDs, also known as TTYs.

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Contact: US Department of Justice
Civil Rights Division
950 Pennsylvania Ave., NW
Voting Section - 1800 G
Washington, DC 20530
www.usdoj.gov/crt/voting
(800) 253-3931 (voice/TTY)

NATIONAL VOTER REGISTRATION ACT, 1993

Also known as the “Motor Voter Act,” this act makes it easier for all Americans to exercise their fundamental right to vote. One basic purpose of this act is to increase the historically low registration rates of minorities and persons with disabilities that have resulted from discrimination. The Motor Voter Act requires all offices of state-funded programs that are primarily engaged in providing services to persons with disabilities to provide all program applicants with voter registration forms, to assist them in completing the forms, and to transmit completed forms to the appropriate state official.

Contact: US Department of Justice
Civil Rights Division
950 Pennsylvania Avenue, NW
Voting Section - 1800 G
Washington, DC 20530
www.usdoj.gov/crt/voting
(800) 253-3931 (voice/TTY)

CIVIL RIGHTS OF INSTITUTIONALIZED PERSONS ACT (CRIPA)

This act authorizes the US Attorney General to investigate conditions of confinement at state and local government institutions such as prisons, jails, pretrial detention centers, juvenile correctional facilities, publicly operated nursing homes, and institutions for people with psychiatric or developmental disabilities. Its purpose is to allow the Attorney General to uncover and correct widespread deficiencies that seriously jeopardize the health and safety of residents of institutions.

Contact: US Department of Justice
Civil Rights Division
950 Pennsylvania Ave., NW
Special Litigation Section - PHB
Washington, DC 20530
www.usdoj.gov/crt/split
(877) 218-5228 (voice/TTY)

INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)

This act (formerly called Public Law 94-142 or the Education for all Handicapped Children Act of 1975) requires public schools to make available to all eligible children with disabilities a free appropriate public education in the least restrictive environment appropriate to their individual needs.

IDEA requires public school systems to develop appropriate Individualized Education Programs (IEPs) for each child. The specific

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special education and related services outlined in each IEP reflect the individualized needs of each student.

Contact: Office of Special Education and Rehabilitative Services
US Department of Education
400 Maryland Avenue, SW
Washington, DC 20202-7100
www.ed.gov/about/offices/list/osep
(202) 245-7468 (voice/TTY)

REHABILITATION ACT

The Rehabilitation Act prohibits discrimination based on disability in programs conducted by Federal agencies, in programs receiving federal financial assistance, in federal employment, and in the employment practices of federal contractors. The standards for determining employment discrimination under the Rehabilitation Act are the same as those used in title I of the ADA.

Section 501 Section 501 requires affirmative action and nondiscrimination in employment by federal agencies of the executive branch. To obtain more information or to file a complaint, employees should contact their agency's Equal Employment Opportunity Office.

Section 503 Section 503 requires affirmative action and prohibits employment discrimination by federal government contractors and subcontractors with contracts of more than \$10,000.

Contact: Office of Federal Contract Compliance Programs
US Department of Labor
200 Constitution Avenue, NW
Room C-3325
Washington, DC 20210
www.dol.gov/esa/ofccp
(202) 693-0106 (voice/relay)

Section 504 Section 504 states that "no qualified individual with a disability in the United States shall be excluded from, denied the benefits of, or be subjected to discrimination under" any program or activity that either receives federal financial assistance or is conducted by any executive agency or the US Postal Service.

Contact: US Department of Justice
Civil Rights Division
950 Pennsylvania Ave., NW
Disability Rights Section - NYAV
Washington, DC 20530
www.ada.gov
(800) 514-0301 (voice)
(800) 514-0383 (TTY)

Section 508 Section 508 establishes requirements for electronic and information technology developed, maintained, procured, or used by the federal government. Section 508 requires federal electronic and information technology to be accessible to people with disabilities, including employees and members of the public.

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Contact: US General Services Administration
Center for IT Accommodation
1800 F Street, NW
Room 1234, MC:MKC
Washington, DC 20405-0001
www.gsa.gov/section508
(202) 501-4906 (voice)
(202) 501-2010 (TTY)

ARCHITECTURAL BARRIERS ACT (ABA)

This act requires that buildings and facilities that are designed, constructed, or altered with federal funds, or leased by a federal agency, comply with federal standards for physical accessibility. ABA requirements are limited to architectural standards in new and altered buildings and in newly leased facilities. They do not address the activities conducted in those buildings and facilities. Facilities of the US Postal Service are covered by the ABA.

Contact: US Architectural and Transportation Barriers
Compliance Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
www.access-board.gov
(800) 872-2253 (voice)
(800) 993-2822 (TTY)

Source: US Department of Justice. A Guide to Disability Rights Law. <http://www.ada.gov/cguide.htm>. Accessed January 26, 2011.

SUMMARY

This chapter briefly details the history of increasing advancement for US citizens with disabilities, both military and civilian. Where once emphasis was on medical treatment, now emphasis is on supporting the whole person with reintegration into the life he or she chooses. Yet, many challenges remain for people with disabilities and those who care about them, such as interventions for those who have experienced psychological and other trauma, lack of community supports, and limited employment opportunities. Future advancements for those with disabilities rest in the establishment and implementation of effective strategies to meet these challenges.

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DAN NEVINS BEGAN HIS MILITARY CAREER out of high school as an enlisted paratrooper stationed in Germany. Upon the completion of his 8-year enlistment, which included 4 years at Fort Bragg, North Carolina, Nevins remained in the California Army National Guard while earning a bachelor of science degree in business administration from Sonoma

State University. Upon graduation, he joined Pfizer Pharmaceuticals, where he excelled as a sales representative.

In February 2004, Staff Sergeant Nevins was deployed to Balad, Iraq, as a member of Task Force Tacoma, where he served as an infantry squad leader. Nine months later, on November 10, 2004, while on an early morning combat mission, an improvised explosive device detonated beneath the vehicle in which he was a passenger. As a result of his injuries, Nevins suffered a traumatic brain injury, his left leg was amputated below the knee, and his





right leg was severely damaged, requiring more than 30 surgeries. Nevins spent 18 months recovering at Walter Reed Army Medical Center and, following medical retirement in August 2006, relocated with his family to Jacksonville, Florida.

Nevins was appointed community outreach manager for the PGA Tour in April 2007. One year later he suffered a setback when a recurrent bone infection in his right leg necessitated the amputation of the leg below the knee. Following surgery, Nevins spent 4 months in recovery and rehabilitation back at Walter Reed Army Medical Center. He returned to the PGA Tour in July 2008, where his perseverance, positive attitude, and passion for helping other wounded soldiers continued to be a source of inspiration.

In May 2008, Nevins received the George C. Lang Award for Courage, the highest award bestowed by the Wounded Warrior Project. Although a highly decorated soldier, the Courage Award remains his most significant honor. Nevins credits the Wounded Warrior Project for his successful rehabilitation, positive attitude, “can do” spirit, and his passion for helping his fellow Warriors in any way that he can. He joined the Wounded Warrior Project in March 2009 as manager of strategic partnerships before being promoted to his current role.

*With proper training and understanding,
they have overcome incredible physical disadvantages
to become outstanding workers, citizens, and members of
their communities, proving time and again that it is not the
body alone but the spirit that makes a man.*

★ ★ ★

HOWARD A. RUSK, MD

A WORLD TO CARE FOR: THE AUTOBIOGRAPHY OF
HOWARD A. RUSK, MD, 1972

CHAPTER FOUR

Models of Disability and Impairment: How to Promote Positive Interactions

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MODELS OF DISABILITY

Everybody looks at the world through their own myopic lenses; people from “other” or “different” cultures have something special about them, but each person’s own experiences are what he or she considers to be normal. Historical data demonstrate that people with disabilities have been a minority group in social settings; a common set of prejudicial values and limiting social attitudes and stigmas are common experiences shared by persons with disabilities.¹ For Warrior Transition Leaders (WTLs), understanding how “disability” and “difference” are defined and applied is vital to their successful leadership. WTLs can impact positive changes in how disability identity is viewed among their able-bodied Soldiers and in relation to the Army as a whole, as well as among Soldiers with disabilities. Furthermore, WTLs can influence the ways that Soldiers think about disability and help develop supportive communities within the Army and the United States at large. Paul Longmore, professor at San Francisco State University, wrote, “Historically, the characterization of people in mainstream culture has stressed their significant abnormalities.”¹ Geert Hofstede, extramural fellow at the Center for Economic Research at the University of Tilburg, The Netherlands, Gert Jan Hofstede, professor at Wageningen University, The Netherlands, and Michael Minkov, chief assistant professor at International University College in Bulgaria, described a culture as having four primary components: (1) symbols (eg, words, clothing, jargon); (2) heroes (ie, role models with behavioral characteristics that are valued by a society whether living, dead, real, or imaginary); (3) rituals (eg, customs, ceremonies); and (4) values (which are so ingrained that often people do not realize that they are a part of themselves and society).² The Army has a unique culture—one in which the inclusion of Soldiers with disabilities is important for WTLs.

THE MEDICAL MODEL

Models of disability are often used to structure healthcare policies and to view the relationship between people with disabilities, the public at large, and healthcare providers. The Medical Model describes disability as a negative occurrence, such as a disease or abnormality to be cured.³ This perspective views the disability as originating within the person. However, this may place the person with the disability in a vulnerable, dependent position. Although it may be useful in acute illness or injury, this model does not provide a healthy long-term perspective to promote resilience, independence, and reintegration.

Compelling examples of individuals, albeit relatively few in number, with mobility, auditory and visual disabilities who are valued members of the profession argue it's time to consider our . . . view of what it takes to be a capable doctor.

JORDAN J. COHEN

PRESIDENT, ASSOCIATION OF AMERICAN MEDICAL COLLEGES

THE SOCIAL INTEGRATIVE MODEL

People with disabilities are not necessarily sick. Their impairments mean only that they may complete tasks in different ways than their able-bodied peers. People with disabilities have rejected the Medical Model, demanding a more participatory model in which they make decisions about themselves, hence the slogan “Nothing about us, without us.”⁴ Thus, the Social Integrative Model was adopted and is the more accepted description—and goal—of persons with disabilities.⁵ The Social Integrative Model sees disability as a natural occurrence and redefines disability as the mismatch between the person with a physical or mental impairment and the physical, social (attitudes), and political environments. The person’s disability does not need to be “fixed” or “cured.” Rather, physical environments, attitudes, and policies and procedures should be changed to accommodate the person’s impairments.

The fundamental precept of the Social Integrative Model is that all people must develop the attitude of seeing the person first as a valued member of society, not solely as a diagnosis or patient, with the goal of achieving full participation.⁶ Participation, as defined by the Social Integrative Model, is when the person with a disability is able to do the things he or she wants to do within his or her community or social context. The social context, for example, may be to continue on active duty, become a successful Veteran in his or her community, or become a Paralympic athlete. Participation promotes resilience and is the opposite of disability, and the task in which the person with a disability participates is entirely his or her choice.

THE UNITED NATIONS CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES

The United Nations Convention on the Rights of Persons with Disabilities, of which the United States is a signatory, provides an excellent framework for supporting Soldiers with disabilities, as well as for establishing working relationships with coalition partners in caring for their wounded, injured, and

ill Soldiers.⁷ Through the Convention on the Rights of Persons with Disabilities, the world has definitively recognized the human rights of people with disabilities to promote their inclusion in decision making, provide access to appropriate assistive technology, and minimize barriers to the environment and services. The Convention on the Rights of Persons with Disabilities is pivotal to bringing people with disabilities under the umbrella of civil rights protection.

THE WORLD HEALTH ORGANIZATION’S INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY, AND HEALTH MODEL

The World Health Organization’s International Classification of Functioning, Disability, and Health (ICF) Model provides a comprehensive operational framework. The foundations for the ICF are displayed in Exhibit 4-1.⁸

The Social Integrative Model is based on the World Health Organization’s ICF Model that provides universal terms to use when discussing or talking to persons with disabilities. For example, physical or mental problems are considered impairments, whereas the inability to complete daily tasks is a functional limitation. Within this model, disability results from barriers to participation derived from physical environmental, societal (attitudes), and/or political barriers that do not support the person with an impairment or functional limitation.

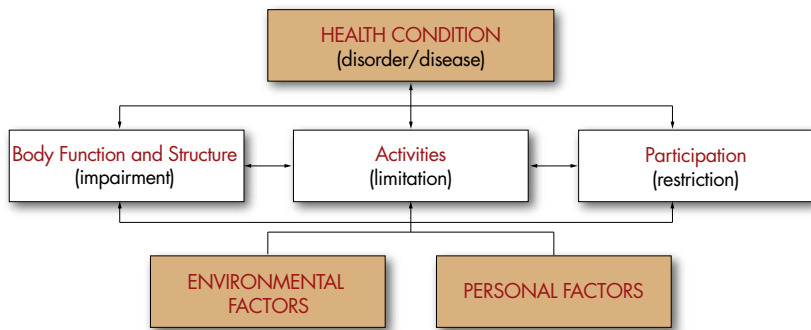
EXHIBIT 4-1. *Foundations for the International Classification of Functioning, Disability, and Health (ICF) Model*

ICF Model’s Characteristics	Replaces These Undesired Characteristics
Human functioning	Not solely disability
Universal	Not just from a minority perspective
Integrative	Not merely medical or social
Interactive	Not linearly progressive
Promote parity	Not based solely on cause or origin of impairment
Inclusive	Include both person and environment
Cultural applicability	Embrace concepts from all around the world
Operational	Driven by theory and practice
Cover the life span	Encompass all ages

Data source: International Classification of Functioning, Disability, and Health (ICF). World Health Organization Web site. www.who.int/icidh/. Accessed March 28, 2011.

The ICF Model incorporates body factors, activities, participation, and context in analyses of facilitators and barriers to participation, career, and performance. Technology and environmental modifications are among ICF facilitators for performance. The ICF Model is described in the diagram

FIGURE 4-1. *The World Health Organization's International Classification of Functioning, Disability, and Health Model*



in Figure 4-1. The model can be used to describe and explore different aspects of the process of functioning and disability. The ICF Model shows the complex relationship between health conditions and contextual factors, both environmental and personal. Personal factors are the features of an individual, and may include gender, race, age, fitness, lifestyle habits, coping styles, social background, education, and professional past life events. Some cases are not specifically classified in ICF because of the social and cultural variances associated with them, but are included in the model to show their contributions. For example, a Soldier may have impairments without activity limitations such as scarring or blast tattooing. Furthermore, a Soldier may have participation restrictions without activity limitations and impairments, such as from a psychological injury.

THE AMERICANS WITH DISABILITIES ACT

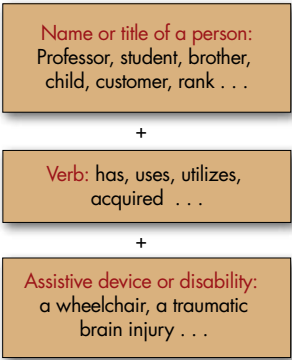
Americans with Disabilities Act (ADA) of 1990 was signed into law on July 26, 1990, and is the primary piece of federal legislation that enforces the civil rights of Americans with disabilities.⁹ The ADA was written to ensure equal access for persons with disabilities to the community by making public transportation, telecommunication systems (eg, telephone, Internet), and federal and public buildings accessible and providing protections to improve employment opportunities. The ADA has had a tremendous impact on improving the quality of life of Americans with disabilities, and it serves as a model for similar legislation in countries around the globe. The foundation of the ADA is that “no otherwise qualified individual with a disability shall because of his disability be excluded from participation, denied benefits or be subjected to discrimination.” The ADA requires reasonable accommodations in design, modifications, policies, practices, and procedures.

Social and attitudinal barriers are often the most difficult to overcome.¹⁰ All of us have preconceptions of what it would be like to have a disability. Naturally, Soldiers have thought about becoming wounded or injured, and how this may affect their lives. Therefore, having a basic understanding of disability is important for WTLs to provide their Soldiers who have become wounded, injured, or ill the tools to be resilient to achieve maximal capabilities and strive for full participation. Knowledge and understanding are important gear for removing attitudinal barriers, and language can help to promote acceptance and inclusion.

PERSON FIRST LANGUAGE CONCEPT

To demonstrate a concept, “Person First Language,” which helps to keep the focus on the person and not on his or her impairments, see the model in Figure 4-2. Using the formula described in Figure 4-2, if a Soldier is an amputee, then one should refer to him or her as a Soldier with a leg amputation. He or she does not have a “stump,” rather, he or she has a “residual limb.” Similarly, a Veteran whose back injuries result in paralysis is referred to as a Veteran with a spinal cord injury. Using this style of speaking and writing has the effect of focusing on the person rather than his or her wounds, injuries, or illnesses.

FIGURE 4-2. *Quick Formula for Using “Person First Language”*



WTLs must successfully interact with Soldiers with disabilities, both hidden and visible. To be successful in their mission, WTLs must promote healing, resilience, and reintegration. The manner in which the WTLs interact with Soldiers and Veterans can have either positive or negative consequences. The goal is to minimize the negative and to maximize the positive. Behavior toward people with disabilities, known as disability etiquette, can powerfully impact a Soldier’s outlook and progress.¹¹ Ward and Associates offer some simple rules to follow¹²:

1. The WTL should ask before he or she helps. If the WTL offers assistance, wait until it is accepted. Then, listen or ask for instructions.
2. The WTL should be sensitive about physical contact. The WTL should shake hands with the Soldier with a disability just as he or she would with anyone else in the group.
3. The WTL should think before he or she speaks.
4. The WTL should talk directly to the Soldier, not to a caregiver or interpreter.
5. The WTL should not make assumptions about capabilities, assistance needs, or intelligence.

Here are a few more specific examples. For Soldiers who are using wheelchairs, the following tips are useful:

1. Offer to shake hands when greeting the Soldier.
2. The WTL should not lean on or touch the Soldier's wheelchair.
3. The WTL should place himself or herself at eye level when in conversation with the Soldier, offer to move somewhere where the WTL can sit down, or take a knee. When encountering a Soldier who uses a cane, crutch, other assistive device, or another object with their arms for balance, refrain from touching them or moving an object around them unexpectedly.

When encountering a Soldier who is blind or who has low vision, WTLs should consider these tips:

1. The WTL should identify himself or herself and allow the rest of the group to do the same.
2. The WTL should offer his or her elbow to guide the Soldier. Do not grab the Soldier's arm as he or she cannot disengage if needed.
3. Walk on the side opposite of the guide dog or cane.
4. Give specific nonvisual directions, for example, turn left in 10 paces.
5. Orient Soldiers with visual impairments using numbers on the face of a clock, for example, the door is at 2:00.
6. Provide alternative formats of written materials (eg, email, Web sites, Braille).

Partial loss of hearing is the most common form of impairment among Soldiers. Soldiers often work in hazardous noise environments, and despite substantial efforts to protect hearing, a high occupational risk for hearing loss among Soldiers exists.

When working with a Soldier with significant hearing loss or deafness, WTLs will find the following simple rules helpful:

1. To gain the Soldier's attention the WTL should gently tap on a shoulder or wave his or her hand to get attention.
2. Use a normal tone, and speak clearly and distinctly.
3. The WTL should use facial expression, body language, and gestures to convey his or her message.
4. If a sign language interpreter is involved, the WTL should speak directly to the Soldier who is deaf, not to the interpreter.
5. The WTL should be prepared to write notes to communicate, if necessary.

Psychological impairments and brain injuries are typically not visible to other people, and therefore may make social interactions for these Soldiers more challenging. The most important consideration is that all Soldiers should be treated with respect, dignity, and a sense of responsibility to facilitate their healing and medical rehabilitation. Psychological impairments or brain injuries should not be equated with lower intelligence. Military leaders of all ranks must be aware that Soldiers with psychological impairments or brain injuries may have difficulty processing or expressing emotions; furthermore, some Soldiers with psychological impairments or brain injuries may react differently or overreact to emotionally charged topics or conversations. Provide private areas to discuss difficult topics with Soldiers with psychological impairments or brain injuries, and provide emotional support as needed, such as redirecting them, assuring their safety, or asking family members to be present to lend support.

ASSISTANCE DOGS

Recently, Soldiers with disabilities have been using assistance dogs. These dogs may provide assistance with common tasks such as retrieving items (service dogs), providing balance (balance dogs), guiding their owners safely (guide dogs), and alerting their Soldier to such important sounds as a siren or a doorbell ringing (hearing dogs).¹³ Psychological assistance dogs are also being used successfully for Soldiers with posttraumatic stress and traumatic brain injury to monitor their Soldier's behavior and alert the Soldier before becoming stressed or creating an awkward situation.

When in the presence of a Soldier with a service dog, it is important to do the following:

1. Do not distract, feed, or pet the assistance dog when it is working.
2. Always respect the Soldier who is handling his or her assistance dog.

Assistance dogs are carefully selected, highly trained, and painstakingly matched to the Soldiers. Assistance dogs also help Soldiers with disabilities to be less anxious, have positive interactions with others, and feel more comfortable participating in activities. However, assistance dogs require work and direction, and their Soldiers must be responsible for their care and well-being. More information about assistance dogs is available in chapter 8.

PHYSICAL BARRIERS

Physical barriers inhibit full participation and send a message to Soldiers with disabilities that they may not be welcome or given due consideration. The ADA Access Guidelines (ADAAG) provide excellent examples of how to make environments more inclusive to Soldiers with disabilities.¹⁴ The Access Board, the federal agency responsible for the ADAAG, supports research, compiles data, and makes improvements to the ADAAG regularly. Ramps, curb-cuts, doorways, lighting, signage, and other accommodations are essential to promoting successful medical rehabilitation. WTLs should be familiar with the basics of the ADAAG, but equally important, they also should meet with their Soldiers regularly and listen to their experiences and suggestions for improvements. Often some of the most important concerns of Soldiers in the Warrior in Transition Unit (WTU) are not addressed by the ADAAG.

WTLs should accompany various Soldiers in their WTU to appointments and develop an understanding of such barriers as sidewalk cracks, long inclines, cars parked in front of curb-cuts, and long waits for elevators. Often Soldiers in the WTU do not take the most direct route because it is too crowded or to avoid a dangerous intersection that may go unnoticed by others. It is a good practice to work with WTU Soldiers to create a guide for each post and WTU company or smaller sized unit. Maps of accessible routes on post, especially between housing areas and clinical areas, are important tools to develop. Note where problems with snow or ice buildup exist and long stretches of exposure to heat and sunlight are problems to avoid. When the WTU is having an awards ceremony or any gathering, ensure that all Soldiers are able to have a reasonably good viewing position and can hear any speakers. Sign-language translators should be available upon request or a routine part of large gatherings. When serving food, WTLs should ensure that assistance is available and that Soldiers can reach the food safely when using mobility devices (eg, wheelchair, crutches, canes, prosthetic devices). Simple items such as drinking straws can allow a Soldier with arm impairments to drink independently. When an assistance dog is helping a Soldier, identify areas to exercise the animal and permit toileting. Leaders

should consult a physical or occupational therapist when planning activities or events.

QUESTIONS FOR THE WTL TO CONSIDER

To serve Soldiers and their families better, a WTL must examine how he or she might respond to the following questions:

1. Was the first encounter with a Soldier with a disability while deployed, at home, at a social or family event, through the WTL's work with the WTU, or through the media (eg, film/television)?
2. If it was in person, how was the Soldier with a disability integrated into the community or group? Did the WTL or anyone else ask the Soldier about his or her disability or assistive technology? If it was through media, does the WTL remember anything about how the Soldier with disability was portrayed?
3. Looking back, can the WTL identify any preconceived notions or assumptions that he or she might have had about the Soldier or the character?
4. Consider the portrayal of Soldiers with disabilities in popular culture/media. Does the WTL think the portrayal has changed in recent years? If so, how?

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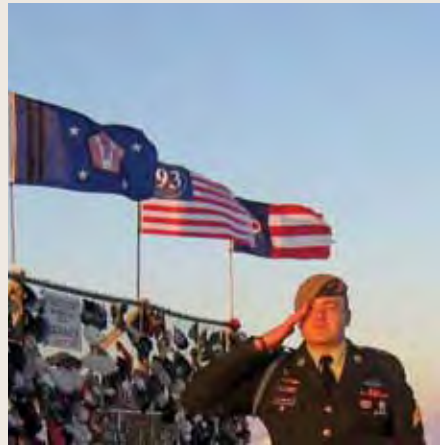


SERGEANT (RETIRED) JEREMY FELDBUSCH was the first in his family to attend college. He graduated in 2001 with a bachelor of science degree in biological sciences from the University of Pittsburgh. He is a former US Army Ranger who served in the 3rd Battalion of the 75th Ranger Regiment. He was blinded and sustained a traumatic brain injury by enemy artillery on April 3, 2003, while on guard duty in Haditha, Iraq. Feldbusch was awarded the Purple Heart

and the Bronze Star with Valor for his actions. Guided by the words of the Soldier's Creed to never accept defeat and to never quit, Feldbusch learned to navigate using a white cane and mastered Braille.



Feldbusch is an advocate for wounded Soldiers and their Families, and he appeared in the moving documentary “Home Front,” which chronicles his recovery and captures some of the challenges faced by wounded Veterans. He is a national spokesperson for the Wounded Warrior Project and has been an effective advocate in the political arena, lobbying Congress to ease the financial and emotional stress of wounded Veterans and their Families. His efforts, along with those of other Veterans who are advocates, have led to the passage of federal laws delivering millions of dollars in aid to severely wounded Soldiers.





We are put on this earth to make a difference.



REPRESENTATIVE JOHN P. MURTHA

DECEMBER 2009

CHAPTER FIVE

The Roles of Medical Rehabilitation Professionals

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THE TEAM APPROACH

Successful outcomes for the treatment and recovery of the wounded, injured, or ill Soldier require a team of medical professionals with specialized knowledge of the rehabilitation process. The proper treatment approach has tremendous impact on an individual's quality of life outcomes. The best multidisciplinary rehabilitation assessment team consists of a physiatrist or other physician, occupational and/or physical therapists (OTs, PTs), speech and language pathologists (SLPs) with specialty training/certification, a

rehabilitation engineering technologist, the Soldier and his or her Family, and other professionals that may be consulted depending on the needs and goals of the wounded, injured, or ill Soldier. Rehabilitation counselors, nurses, personal care assistants, and other similar professionals can also make important contributions to the rehabilitation team.

A proper assessment begins with an initial interview that involves listening and paying attention to the Soldier's needs, concerns, and goals. It is important to understand the medical variables assessed by the physiatrist and shared with the team on how underlying medical conditions may impact the rehabilitation process, as well as the physical and functional variables assessed by the therapists on how physical capacities and limitations affect mobility and activities of daily living. It is important to know how the Soldier performs tasks and where the deficits are. The team members will explain the outcomes, reasons, and facts upon which they based the final recommendation of the treatment plan to the Soldier and his or her Family.¹

Research in medical rehabilitation is the foundation of advancements made in the clinical care of the wounded, injured, or ill Soldier. Research allows one to understand the mechanisms of how diseases and impairments occur, how drugs work, and how technology and engineering principles are used to improve the lives of wounded, injured, or ill Soldiers. Research can also help one determine whether certain therapies, treatments, or interventions are effective, which ones are superior to others, and whether they have an impact on functional outcomes. Research can also generate more knowledge and description about conditions, improve understanding of the Soldiers' viewpoints, and provide information about Soldiers' quality of life and the quality of the care they are receiving.

PHYSICAL MEDICINE AND REHABILITATION

In 1947, the American Board of Physical Medicine and Rehabilitation (PM&R) was founded, establishing PM&R as a field of medicine.² Also known as physiatry, the field can be traced back to its ancient roots when physical agents and modalities were used to prevent and treat diseases. Physiatrists are medical doctors, or practitioners of physiatry. They specialize in treating patients of all ages with disorders or trauma to the nervous and musculoskeletal systems, pain syndromes, and other types of disabilities. Physiatrists are trained in electromyography and nerve conduction studies that can help to diagnose neuromuscular disorders and guide treatment. The rapid expansion of PM&R has resulted from the wars of the 20th century causing unique and complex injuries. Better methods of rehabilitation were needed, and these treatment regimens became more evidence based as treatments were better regimented and researched.

Physiatrists treat patients in both ambulatory and acute care settings within the hospital. Physiatrists, who are the team leaders of care during rehabilitation, direct a rehabilitation care plan that includes several other team members. PTs and OTs, SLPs, nurses, social workers, orthotists, nutritionists, rehabilitation counselors, neuropsychologists, rehabilitation engineers, and others form the multidisciplinary team whose main goal is to restore and preserve independent functioning. During the rehabilitation process, physiatrists also manage the patient's other medical problems.

The team-developed treatment plans are tailored to each Soldier, and these plans often depend on the life roles of the wounded, injured, or ill Soldier. The plan is geared toward fostering health and wellness and teaching the Soldier independence in self-management, communication, and mobility. The goals of the Soldier are central to this plan, but goals of the caregivers as well as the home and community environments are also important components in formulating a strategy for rehabilitation.

Physicians completing a residency in PM&R can seek additional training through fellowships that include spinal cord injury, traumatic brain injury, research, pediatrics, musculoskeletal/sports medicine, and pain management. Some of the patients that a physiatrist may treat within the realm of military medicine are those with spinal cord injuries; traumatic brain injuries; amputations; limb salvage; musculoskeletal or nerve injuries and back pain; or even those with other disabilities such as multiple sclerosis, stroke, or complications from chronic conditions such as diabetes. Some of the types of problems that a physiatrist may treat are skin breakdown; obesity; bowel and bladder problems; musculoskeletal, back, and nerve injuries; chronic pain; and spasticity. Physiatrists also guide prescriptions for orthotics, prosthetics, mobility devices, and assistive technology including cognitive assistive technologies.

MILITARY PHYSICIAN ASSISTANTS

Military physician assistants work on a team with supervising physicians and surgeons at military hospitals and clinics on US soil, overseas, aboard ships, and with special operations units to care for the health of members of the military and their families during routine and emergency medical events. Military physician assistants obtain medical histories and perform comprehensive exams, treat minor injuries, interpret diagnostic tests, counsel and educate patients, prescribe medications, and more.

PHYSICAL THERAPY

PTs focus on restoring function to improve mobility, relieve pain, and prevent or limit permanent physical disabilities of Soldiers experiencing injuries or disease. They provide treatment and patient education to restore, maintain, and

promote overall fitness and health. Their patients include accident victims and individuals with disabling conditions such as amputations, limb salvage, low back pain, arthritis, heart disease, fractures, head injuries, and spinal injuries.³ During the initial interview, PTs examine Soldiers' medical histories and then test and measure the Soldiers' strength, range of motion, balance and coordination, posture, muscle performance, respiration, and motor function. Based on the findings, PTs develop plans describing a treatment plan and its anticipated outcome. A typical treatment plan will have an active treatment component that will include exercise, especially for Soldiers who have been immobilized or who lack flexibility, strength, or endurance. PTs provide instructions on how to perform the exercise and encourage Soldiers to use their muscles to increase their flexibility and range of motion. They provide written instructions and teach Soldiers how to perform basic exercises at home to expedite their recovery. More advanced exercises focus on improving strength, balance, coordination, and endurance. The goal is to improve physical function to support daily activities at work and at home.

Electrical stimulation, hot packs or cold compresses, and ultrasound are passive treatment components sometimes used to relieve pain and to reduce swelling. The use of traction or deep tissue massage may be used to relieve pain and improve circulation and flexibility.

PTs teach Soldiers to use assistive and adaptive devices, such as crutches, prostheses, wheelchairs, and seating systems. PTs recommending advanced rehabilitation seating and mobility technology should have specialized knowledge in the Assistive Technology (AT)–Assessment process and are encouraged to obtain the Assistive Technology Professional (ATP) certification, provided by the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA).

As treatment continues, PTs document the Soldiers' progress, conduct periodic examinations, and modify treatments when necessary. PTs often consult and practice with a variety of other professionals, such as physicians, dentists, nurses, educators, social workers, OTs, SLPs, rehabilitation engineers, and audiologists. Some PTs treat a wide range of ailments; others specialize in areas such as assistive technology, pediatrics, geriatrics, orthopaedics, sports medicine, neurology, and cardiopulmonary physical therapy.

OCCUPATIONAL THERAPY

Occupational therapy is a healthcare profession that provides services to individuals of all ages whose lives have been disrupted by physical injury or illness, developmental problems, the aging process, or social or psychological difficulties. OTs evaluate Soldiers' abilities to perform the everyday tasks they need to do (toileting, dressing); are required to do (data entry, tool and

machine repair, firing a weapon); or want to do (play sports, continue on active duty). When task performance is too difficult, painful, or cannot be accomplished at all, OTs modify or simplify the tasks; adapt tools, objects, or environments; or match technologies to people's needs and preferences—enabling more independent, safe, and adequate task performance. OTs work in hospitals, rehabilitation centers, nursing facilities, schools, people's homes, and work sites. They also work closely with families and caregivers to teach them the best methods to assist those for whom they care.⁴

OTs teach Soldiers to use assistive devices and wheelchairs. OTs recommending advanced ATs should have specialized knowledge in the AT–Assessment process and are encouraged to obtain the ATP certification, provided by RESNA.

SPEECH AND LANGUAGE THERAPY

An SLP deals with the prevention, diagnosis, and treatment of a wide range of primarily expressive communication disorders, including the identification, diagnosis, and rehabilitation of speech, language, and swallowing dysfunction.⁴ For Soldiers with complex communication needs the SLP will provide augmentative and alternative communication intervention to optimize the communication of Soldiers with significant communication disorders. SLPs recommending advanced augmentative and alternative communication devices should have specialized knowledge in the AT–Assessment process and are encouraged to obtain the ATP certification, provided by RESNA.

AUDIOLOGY

An audiologist primarily addresses receptive communication disorders, especially the prevention, identification, and measurement of hearing loss and the rehabilitation of individuals with hearing impairments, as well as the assessment of balance disorders. The audiologist will evaluate, consult, and provide various technology options, such as hearing aids and assistive devices for hearing impairment, to optimize the communication of Soldiers with significant hearing disorders to achieve maximum potential.⁴ Hearing loss is one of the most common impairments associated with military service.

REHABILITATION NURSING AND NURSE CASE MANAGEMENT

Case management involves managing many aspects of providing health and social interventions across the continuum of care. Since rehabilitation nurses have become involved in this systematic approach to caring for patients or consumers, the Association of Rehabilitation Nurses supports the following definition of case management: the process of assessing, planning, organizing, coordinating, implementing, monitoring, and evaluating the services and

resources needed to respond to an individual's healthcare needs. The goal of case management is the provision of quality and cost-effective healthcare and social services. The rehabilitation nurse case manager realizes this goal by organizing rehabilitation and other necessary healthcare services to promote outcomes for the individual that will encourage the highest possible level of independence and quality of life. Case management services are provided in institutional, residential, outpatient, and community settings. These settings include—but are not limited to—acute care facilities, rehabilitation facilities, skilled nursing facilities or nursing homes, residential facilities, day care agencies, private residences, or the workplace.⁵

REHABILITATION COUNSELING

The field of rehabilitation counseling was developed as a master's level education for professional counselors with specialty training in disability, medical aspects of disability, advocacy, career guidance and vocational assessments, and rehabilitation systems. Rehabilitation counselors require a national credential, the Certified Rehabilitation Counselor. Rehabilitation counseling is a process whereby the counselor works collaboratively with a Soldier with a disability to understand existing problems, barriers, and potentials to facilitate the Soldier's effective use of personal and environmental resources for personal, social, career, and community adjustment. The scope of practice includes career counseling; assessment and appraisal; case management; referral and service coordination; job analysis; job development; placement services including assistance with employment and job accommodations; and intervention to remove environmental, employment, and attitudinal barriers.⁶

NEUROPSYCHOLOGY

A neuropsychologist studies the cognitive functions of the brain, such as attention, language, and memory. Although neuropsychologists hold doctoral degrees—PhD (Doctor of Philosophy) or PsyD (Doctor of Psychology)—they differ from medical doctors because they do not prescribe medications or perform surgery. Neuropsychologists work in a variety of settings, depending on their specialty. In medical treatment facility clinical settings, they help to treat and assess Soldiers with neuropsychological problems. Neuropsychologists sometimes help to develop medications and products related to brain health or brain function. Depending on the environment in which they work, neuropsychologists may work with neuroscientists, philosophers, neurologists, psychiatrists, and computer scientists to perform research and work with patients.⁶

PSYCHIATRY AND PSYCHOLOGY

Psychiatry is the medical specialty devoted to the study and treatment of

mental disorders that include various affective, behavioral, cognitive, and perceptual conditions. Psychiatric assessment typically starts with a mental status examination and the compilation of a case history. Psychological tests and physical examinations may be conducted, including on occasion the use of neuroimaging or other neurophysiological techniques. Psychiatric treatment applies a variety of modalities, including medication, psychotherapy, and a wide range of other techniques such as transcranial magnetic stimulation. Treatment may be as an inpatient or outpatient, according to the severity of function impairment and/or the disorder. Psychiatrists complete medical school, are physicians, and, therefore, hold an MD (Doctor of Medicine) or DO (Doctor of Osteopathy) degree. In residency, psychiatrists received specialized training in the field of psychiatry, in addition to the rigorous training of medical school in general.⁷

Clinical psychology is an integration of science, theory, and clinical knowledge for the purpose of understanding, preventing, and relieving psychologically based distress or dysfunction and to promote subjective well-being and personal development. A psychologist usually holds a doctoral degree (a PhD, a PsyD, or an EdD [Doctor of Education]) from a university or professional school. Generally, if he or she is in clinical practice, the degree will be in clinical psychology (although it might be in counseling psychology). With the exception of the PsyD (a purely clinical degree), all psychologists have had extensive training in research, having completed an original scientific study—the doctoral dissertation—as a major part of the training.

SOCIAL WORK

Army social workers give support and assistance to Soldiers in crisis situations. They help to locate and provide support and counseling, and they give professional referrals to Army and military personnel who are on active duty, retired military personnel, and the dependents and families of these groups. Working as a clinical professional in the Army, social workers will work with people on a one-to-one basis, as well as in group settings. They are trained to help lead conflict resolution involving issues from traumatic past experiences and delayed-stress-type issues, to disease and physical illness that afflict Soldiers and their Families. Long separations and intense stress can lead to strong emotional situations, and a trained professional Army social worker can help Soldiers to resolve various Family and personal issues.⁸

ORTHOTICS AND PROSTHETICS

Orthotics and prosthetics are the evaluation, fabrication, and custom fitting of artificial limbs and orthopaedic braces. Orthopaedic braces, or orthoses, are used to stabilize or unload joints; normalize motion and stresses on tissue; sub-

stitute for muscle weakness or paralysis; and assist in normal growth, development, and function. Orthoses can be applied to the head, neck, trunk, or limbs. Artificial limbs—or prostheses—are used to replace missing limbs or portions of limbs, and to restore more normal function of the upper or lower extremities.⁹

Orthotists and prosthetists are part of the healthcare team and work with physicians, therapists, and other healthcare professionals to provide the orthotic and prosthetic needs of patients. Orthotists and prosthetists are responsible for the following:

- performing a comprehensive assessment of the patient's orthotic/prosthetic needs;
- creating a comprehensive orthotic/prosthetic treatment plan to meet the needs and goals of the patient;
- performing the necessary procedures to deliver the appropriate orthotic/prosthetic services, which may include fabrication of the orthosis/prosthesis;
- providing continuing patient care and periodic evaluation to assure/maintain/ document optimal fit and function of the orthosis/prosthesis;
- participating in personal and professional development through continuing education, training, research, and organizational affiliations; and
- developing, implementing, and/or monitoring policies and procedures regarding human, business, and organizational management.

REHABILITATION ENGINEERING

Rehabilitation engineering is the systematic application of engineering sciences to design, develop, adapt, test, evaluate, apply, and distribute technological solutions to problems confronted by Soldiers with disabilities in functional areas, such as mobility, communications, hearing, vision, and cognition, and in activities associated with employment, independent living, education, and integration into the community. Rehabilitation engineers have an important role in understanding the capabilities and application of various technologies to assist in selection process and product design. This specialized knowledge and expertise is recognized by the Rehabilitation Engineering Technology credential created by RESNA. To obtain the Rehabilitation Engineering Technology credential, the engineer must also have obtained RESNA's ATP certification.⁴

RECREATIONAL THERAPY

Recreational therapists, also referred to as therapeutic recreation specialists, provide treatment services and recreation activities for individuals with disabilities or illnesses. They plan, organize, and direct medically approved recreational programs for patients in hospitals and other institutions. In acute

healthcare settings, such as hospitals and rehabilitation centers, they usually treat patients/clients in conjunction or collaboration with physicians, nurses, psychologists, social workers, PTs, and OTs. In long-term and residential care facilities, recreational therapists use leisure activities—especially structured group programs—to improve and maintain their clients’ general health and well-being. They also may provide interventions to prevent the client from suffering further medical problems and complications. The personnel at military-specific facilities are focused on the care of the “tactical athlete.” The expectations of the patient and the healthcare team are for the return to the highest possible level of function.¹⁰

Recreational therapists use various techniques, including arts and crafts, animals, sports, games, dance and movement, drama, music, and community outings to improve and maintain the physical, mental, and emotional well-being of their clients. They help individuals reduce depression, stress, and anxiety; recover basic motor functioning and reasoning abilities; build confidence; and socialize effectively so that they can enjoy greater independence and reduce or eliminate the effects of their illness or disability. In addition, recreational therapists help people with disabilities integrate into the community by teaching them how to use community resources and recreational activities.

ATHLETIC TRAINERS

Not to be confused with personal trainers, athletic trainers are those who pursue their undergraduate degree or higher education to care for athletes (personal trainers help people get fit). Athletic trainers can work in many settings, for example, as team trainers in a high school, university, or professional level setting to provide services both at the team’s facilities and during travel to away games. They may maintain a list of medically eligible players and submit paperwork for insurance claim forms for injured athletes, and they may also work as a liaison between athletes and physicians, consulting on health and treatment plans. Hospitals, occupational health settings, or ambulatory care centers use athletic trainers to coordinate preseason physicals for athletes, work with physicians to determine an appropriate recovery plan after an injury, or create a nutritional program for athletic performance. Athletic trainers in a healthcare setting also evaluate the need for equipment and order new injury care supplies such as tape and ice packs. The armed forces employ athletic trainers to support military personnel in staying fit and preventing and treating injuries in the field.¹¹

SUMMARY

The most effective multidisciplinary rehabilitation assessment team will require the combination of many medical rehabilitation professionals with specialized knowledge of the rehabilitation process as well as the contribution of the Soldier and his or her Family to achieve successful outcomes for treatment and recovery. It is important that all team members understand the Soldier's viewpoints and his or her expectations of quality of life; as the individual treatment plan and the quality of the care has tremendous impact on an individual's quality of life outcomes.

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L. TAMMY DUCKWORTH WAS NOMINATED by President Barack Obama and confirmed by the Senate as the Department of Veterans Affairs Assistant Secretary for Public and Intergovernmental Affairs. As Assistant Secretary, Duckworth represents and advises the Secretary of Veterans Affairs on matters relating to media and public affairs. She

directs departmental communications and oversees programs relating to intergovernmental relations, homeless Veterans, consumer affairs, and the department's six national rehabilitative special event programs.

Duckworth served as the Director of the Illinois Department of Veterans' Affairs from 2006 through 2008. As director, she implemented cutting-edge programs for Veterans, especially in the areas of healthcare, mental health, housing, and employment. She also initiated a public-private partnership program giving grants to nonprofit organizations working on Veterans'





disability, homelessness, long-term medical care, and posttraumatic stress disorder.

As a Major in the Illinois Army National Guard, Duckworth served in Iraq as an assistant operations officer and flew combat missions as a Black Hawk helicopter pilot. During a mission north of Baghdad in 2004, a rocket-propelled grenade struck her aircraft. She continued to pilot the aircraft until she passed out from blood loss. As a result of

the attack, Duckworth lost both of her legs and partial use of one arm. She received many decorations for her actions, including the Purple Heart, the Air Medal, and the Combat Action Badge.

Since her recovery at Walter Reed Army Medical Center, Duckworth has dedicated her life to public service, advocating on behalf of disability rights and Veterans. In 2006, she was the Democratic candidate for Illinois' 6th Congressional District. In 2007 she received the Hubert H. Humphrey Civil Rights Award and was named the 2008 Disabled Veteran of the Year by the Disabled American Veterans. In 2008, she was selected by candidate Obama to deliver the presidential campaign's key address on Veterans' rights at the Democratic National Convention. In 2009, she was named as an American Veterans Silver Helmet award recipient as well as The George Washington University's Colin Powell Public Service Award Recipient. In addition to Duckworth's accomplishments, she has served as a manager for Rotary International's Asia Pacific Region and is fluent





in Thai and Indonesian. She is a published author on the health risks of environmental radon and lung cancer.

Duckworth has declined her Army medical retirement to continue her service in the National Guard. In 2008 and 2009, she completed the Chicago Marathon, fulfilling a promise she made while undergoing her rehabilitation at Walter Reed Army Medical Center. She has also resumed flying as a civilian pilot.

*As we express our gratitude,
we must never forget that the highest appreciation
is not to utter words, but to live by them.*



JOHN FITZGERALD KENNEDY

CHAPTER SIX

Definitions, Descriptions, and Complications of War-Related Injuries and Illnesses

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INTRODUCTION

This chapter outlines common medical conditions, illnesses, and injuries of Soldiers in the Warrior Transition Unit (WTU). It is important that leaders become familiar not only with the various types of illnesses and injuries, but also that they have a good understanding of the challenges, complications, and treatment plans their Soldiers are facing and will face in the future.

Some of the illnesses and injuries are obvious to the outside observer; others are not so apparent. Although each requires a specific level of understanding and knowledge, neuropsychological conditions such as posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), and potential hidden scars are very challenging not only for the affected

Soldiers and their Families, but also for the healthcare providers and the entire leadership team.

POSTTRAUMATIC STRESS DISORDER

DEFINITION

PTSD is a medically recognized “anxiety disorder associated with serious traumatic events and characterized by such symptoms as survivor guilt, reliving the trauma in dreams, numbness, and lack of involvement with reality, or recurrent thoughts and images.”¹ Other characteristics can include avoidance, denial, mild cognitive impairment, substance abuse, and depression. Although it is difficult to determine the extent of this illness in returning Veterans, conservative estimates are that 1 in 10 Soldiers is negatively affected.² A study published in 2010 indicated that “between 8.5% and 14% of Soldiers returning from Iraq report serious functional impairment due to either posttraumatic stress disorder or depression.”³ As of 2009, the Department of Veterans Affairs (VA) reported that it was “treating 143,530 new PTSD patients, which is up from 134,000 the year before.”⁴ Many experts believe that this number could be significantly higher because it does not include the number of Veterans that have not sought treatment or sought treatment outside the VA system.⁴ This illness is often undetected or misdiagnosed, and the sheer number of Soldiers affected indicates that PTSD is a serious problem and has a major impact on returning Soldiers, their Families, and the country as a whole.

TREATMENT

Each individual must participate in a detailed evaluation so a personalized and unique treatment plan can be developed. Often the recommended treatment plan includes 10 weekly counseling sessions within a 15-week window.⁴ The first step is to recognize the signs and symptoms and educate the survivors of a traumatic event as well as their Families. Another step early in the process is to “teach the survivor to cope with posttraumatic memories, reminders, reactions, and feelings without becoming overwhelmed or emotionally numb.”⁵ Although traumatic memories may not completely resolve, the patient is taught coping skills to manage anxiety and allow for the follow-up phases of treatment. Psychological treatment and medication options may include cognitive-behavioral therapy, a “highly promising treatment that works with a person’s awareness and reasoning to change emotions, thoughts, and behaviors.”⁵ In addition to cognitive-behavioral therapy, exposure therapy, and group therapy, medications

such as selective serotonin reuptake inhibitors are often prescribed and are frequently helpful.⁵

PTSD is often accompanied by other complex psychiatric disorders such as alcohol/substance abuse, panic disorders, and other anxiety disorders.⁵ Often treating these disorders in conjunction with PTSD results in the most effective outcome.

TRAUMATIC BRAIN INJURY

TBI affects more than 1.4 million Americans every year. TBI is often referred to as the “signature wound” of the wars in Iraq and Afghanistan.⁶ This is mainly due to the increased use of improvised explosive devices (IEDs) and a greater number of Soldiers experiencing head-related injuries. Improvements in trauma care and protective gear have allowed for an unprecedented number of Soldiers surviving potentially life-threatening injuries and more TBI patients than ever before.

DEFINITION

TBI can be defined as a brain injury that occurs when a sudden trauma or mechanical force causes damage to the brain. TBI can result when the head violently hits an object or when an object pierces the skull and enters the brain tissue.⁷

SYMPTOMS

Symptoms of TBI can be mild, moderate, or severe depending on the extent of the damage to the brain. A person with a mild TBI may remain conscious or may experience a loss of consciousness for a few seconds or minutes and may lose memory of the event immediately after it occurs.⁷

TREATMENT

Much like PTSD patients, TBI patients require an individualized treatment plan. The treatment plan is often difficult and complex, and no single plan works for all patients. The plan is built with the assistance of an interdisciplinary team focusing on an “understanding of the patient’s neurological diagnosis and prognosis, as well as the relationships between the injury and behavior.”⁸ In addition, the treatment plan considers the “patient’s personality, goals, resources and environment, and the community to which the patient and family will be discharged.”⁸ A patient’s hospital stay will vary depending on the severity of the injury and the rate of improvement, but typically the inpatient stay ranges between 30 and 90 days.⁸

AMPUTATION

Of all combat-related injuries and illnesses, probably the most physically obvious are amputations. According to the Pentagon, about 6% of the casualties in the conflicts in Iraq and Afghanistan have returned home with one or more amputated limbs. These patients are often referred to as amputees.⁹

The anticipated functional level of the amputation is determined by several factors including initial injury, the healing and rehabilitation potential, prosthetic considerations, the extent of nonviable tissue on the affected limb, and joint function in relation to the healing wound. In the case of leg amputations, the lower the level of amputation, the greater the probability that the patient will be able to walk with the aid of a prosthetic.¹⁰

WOUND CARE

Traditional dressings are usually adequate for most postamputation surgical wounds. The dressing should be robust enough to cover the wound and withstand movement, and should aid and not interfere with the patient's rehabilitation.¹¹

COMPLICATIONS

Potential complications associated with amputations include infections, tissue necrosis, pain, wound breakdown, bone erosion, and heterotopic ossification (HO).¹¹ HO will be explained in greater detail in the next section. How well a wound heals following an amputation is directly related to the blood supply to the tissue. In some cases, the amputation is revised to ensure sufficient blood supply for wound healing.¹¹

TREATMENT

Often medication is prescribed for amputation-related pain, and antibiotics are given to decrease the likelihood of an infection. The amputation of a limb or limbs is very personal and affects people in different ways. "The emotional loss can be like losing a relative and it will take time to adapt to such a loss."¹⁰ Physically, the body will be permanently altered, and the degree to which an amputation affects a patient's life will often depend on how well physical recovery progresses. Aggressive and immediate physical therapy often improves patient recovery. When given the proper assistance, equipment, and training, amputees may regain the potential to perform virtually any task.¹⁰

HETEROTOPIC OSSIFICATION

DEFINITION

HO refers to bone formation in soft tissues, such as muscles, tendons, and fascia. Heterotopic essentially means “wrong place” and ossification refers to bone formation.¹²

SEVERITY

The severity of the condition varies from patient to patient. Some patients have small nodules of excess bone that are only noted on radiographs, whereas others develop massive bone formation associated with severe and debilitating pain. Studies indicate that trauma is a major contributing factor to HO formation. Often the most effective treatment for the condition is surgery to remove the excess bone formation. HO is most often located around joints—hip, knee, shoulder, and elbow—and frequently linked to patients with injuries to the spinal cord.¹³

BURNS

DEFINITION AND DESCRIPTION

Burns are defined as injuries to tissue caused by heat, friction, electricity, radiation, or chemicals. Burns are grouped into four categories depending on the severity or degree of the injury:

1. first-degree burns are wounds affecting the outermost layer of the skin and involve redness and swelling;
2. second-degree burns go beyond the surface of the skin, affect the deeper layers of skin and include redness, swelling, and blistering;
3. third-degree burns occur when the burn destroys all layers of the skin; and
4. fourth-degree burns occur when the burn extends into the fat, muscle, or bone.¹⁴

TREATMENT

Burns are often very painful and run a high risk of infection. Treatment for burns consists of relieving pain; preventing infections; and maintaining body weight, fluids, and electrolytes.¹⁵ The severity of scarring is unpredictable and depends primarily on the location of the burn, the degree of the burn, and the sex and age of the patient.¹⁶

PHYSICAL AND PSYCHOLOGICAL IMPACT

After initial survival and critical care treatment, burn patients face acute and long-term rehabilitation. Psychological counseling is often included in the patient's overall treatment plan. The psychological needs of the patient will vary, depending on the individual and the stage of recovery. During the acute phase of recovery, symptoms of depression and anxiety are common.

“The long-term stage of recovery typically begins after discharge from the hospital, as patients reintegrate into society.”¹⁷ This stage involves outpatient physical rehabilitation and the possibility of continued frequent dressing changes and surgery. Although this period allows patients to regain a sense of competence, it often highlights the practical limitations of their injuries.¹⁷

LIMB SALVAGE AND RECONSTRUCTION

HISTORIC PERSPECTIVE

For thousands of years, the standard treatment for severely damaged limbs was amputation. Medical records dating back to the 1850s indicate that the survival rates for lower limb amputation patients were often less than 50%. In the early 1900s anesthesia, sanitation, and improved wound care were introduced and dramatically increased the survival rate. Recent advances in all fields of medicine have promoted consideration of limb salvage over amputation as the course of treatment.¹⁸

COMPLICATIONS

Limb salvage is not always the preferred treatment for extensive limb damage. Despite monumental efforts on the part of the patient and the healthcare team, not all cases are successful. Numerous studies indicate that limb salvage is associated with an increased number of operative procedures, increased number of days in the hospital, and prolonged rehabilitation.¹⁸ Unfortunately, in some cases the patient must still undergo limb amputation. Studies are underway to establish guidelines for management of these difficult injuries—keeping in mind that the goal of treatment is to return the individual as close as possible to preinjury function while limiting pain and delayed rehabilitation.¹⁸

ORTHOPAEDIC INJURIES

DEFINITION

Orthopaedic injuries are injuries and disorders of the skeletal system and associated muscles, joints, and ligaments.¹⁹ Although TBI is commonly

referred to as the “signature wound” of Operation Iraqi Freedom/Operation Enduring Freedom, orthopaedic injuries are the most common and result from an increase in the use of IEDs, land mines, and other blast producing weapons by the enemy. Approximately 70% of war wounds are musculoskeletal injuries and 55% are extremity wounds. Fractures account for 26% of injuries (82% of them are open fractures).⁹

COMPLEX WOUNDS

Blast wounds and high-velocity missile wounds, which are some of the most complex injuries that orthopaedic surgeons address, are associated with increased loss of tissue, muscle, and bone, and a greater degree of contamination of open wounds. Fortunately, with the introduction of specific treatment protocols, improved medical treatment capability, and rapid evacuation, many casualties survive. In some cases, patients are being evacuated back to the United States in 16 hours.⁹

NEUROLOGICAL INJURIES

DEFINITION

Neurological injuries involve the nervous system, including any problems with the structural, biochemical, or electrical nerves leading to the brain or the spinal cord.²⁰

SYMPTOMS

Doctors began to track a psychological condition known as “shell shock” when they saw the symptoms of fatigue and anxiety in returning World War I combat Veterans. Although it requires more study, there is now a better understanding on how to effectively treat this invisible wound. Two of the most frequent neurological war-related injuries are PTSD and TBI; both are covered in more detail earlier in this chapter. In 2009, the Department of Defense reported that more than 5,500 troops who have sustained TBIs were being treated, but it is suspected that many Veterans are not being diagnosed. A 2009 RAND study indicated that about 19% of troops surveyed indicated that they probably experienced a TBI during deployment.²¹

TYPES OF INJURIES

Other neurological injuries may not be as common as TBI and PTSD but are no less debilitating, including injuries to the brain and spinal cord, multiple sclerosis, amyotrophic lateral sclerosis, neuromuscular disorder, sleep disorders, and pain.²²

VISION LOSS AND BLINDNESS

DEFINITION

Vision impairment can vary from a mild loss of eyesight to complete blindness. Someone is considered to have low vision if, even with eyeglasses, contacts, medicine, or surgery, they still do not see well. People with severe low vision or very limited vision may be considered partially or legally blind. Vision loss may occur as a result of disease or injury.²³

INCREASE IN OCCURRENCES

Troops serving during Operation Iraqi Freedom/Operation Enduring Freedom have suffered a higher percentage of eye injuries than in the past 160 years of American wars. Even when Soldiers wear proper eye protection, the force of the blast from an IED can move the protection and leave the eyes exposed. Often combat eye injuries require multiple surgical procedures, but fortunately surgery and proper medical care have helped restore complete or partial eyesight to many injured Soldiers.²⁴ The complete loss of one's vision is not only devastating, but it is also debilitating. Individuals often have to reorganize their lives and learn new ways of doing things. Fortunately, devices are available to help those with no vision, such as text-reading software and Braille books.²⁵

HEARING LOSS

DEFINITION

Former Army chief of staff General Peter Schoomaker was once asked why he was wearing hearing aids. The general responded, "Guns, helicopters, demolition—36 years of it."²⁶ Hearing loss and tinnitus (ringing, roaring, or hissing noise in one's ear) have been battlefield risks ever since the introduction of explosives and artillery, but are more prevalent now because of roadside bombs, ambushes, and sudden wildfires.²⁷ Tinnitus and vertigo (sensation of motion or spinning) are common after IED explosions. Data suggest that perhaps a fourth of troops who have served in Iraq since March 2003 have returned with hearing loss from noise and blasts.²⁶

According to the National Institutes of Health, heredity, diseases such as ear infections and meningitis, trauma, certain medicines, long-term exposure to loud noise, and aging have caused hearing loss in the US population.²⁸

SYMPTOMS

Hearing loss can be categorized by which part of the auditory system is

damaged. Service personnel in war zones are at risk for the three basic types of hearing loss:

1. conductive hearing loss;
2. sensorineural hearing loss; and
3. mixed hearing loss.²⁹

Hearing loss is not only a medical condition. If hearing loss results in loss of function, such as difficulty with telephone use or communication with family or at social gatherings with background noise, then quality of life is reduced.

PREVENTION AND TREATMENT

The military is attempting to prevent hearing loss by making available various types of state-of-the-art protection, such as earplugs that contain digital processors that block out damaging sound waves from gunshots and explosions.³⁰ To establish a baseline for hearing abilities, the Army has made hearing tests mandatory before redeployment.³¹ The VA Prosthetic and Sensory Aids Service provides client hearing assessments on which to base decisions on the provision of hearing aids, assistive listening devices, cochlear implants, and other technology such as visual signaling devices and telecommunications devices for the deaf.³² The Hearing Loss Association of North America is also an excellent resource, with many local chapters.³³

SPINAL CORD INJURY

DEFINITION

Spinal cord injury (SCI) is damage to the spinal cord that can be caused by various types of trauma. The injuries can result from “motor vehicle accidents, falls, sports injuries (particularly diving into shallow water), industrial accidents, gunshot, combat wounds, assault, and other causes.”³⁴ Direct damage to the spinal cord can also occur if it is pulled, pressed sideways, or compressed, which may happen if the head, neck, or back are twisted abnormally during an accident, blast, or other traumatic injury. The accumulation of blood or fluid, as well as swelling inside the spinal cord or outside the spinal cord but within the spinal canal, can compress the spinal cord and damage it. A minor injury can cause spinal cord trauma if the spine is weakened (such as from rheumatoid arthritis or osteoporosis), or if the spinal canal protecting the spinal cord has become too narrow (spinal stenosis) from the aging process. Fragments of bone (eg, from broken

vertebrae, which are the spine bones) or fragments of metal (such as from IEDs) can cut or damage the spinal cord.³⁴ “Better body armor and the use of Kevlar (DuPont, Wilmington, DE) helmets do protect troops and they have saved the lives of many men and women in areas of conflict like Afghanistan and Iraq, as has improved medical care. But helmets and body armor cannot protect the frontal area of the head, the face, and the exposed area of the spinal cord.”³⁵

SYMPTOMS

Symptoms may vary depending on the location and severity of injury, if it is complete (the entire cord is severely injured) or incomplete (the cord is only partially injured). When SCIs occur near the neck (cervical), symptoms affect both the arms and the legs, or the function of breathing; whereas when injuries occur at the chest (thoracic), symptoms affect mainly the legs.³⁴ Injuries to the cervical and thoracic spinal cord can cause breathing difficulties (from paralysis of the breathing muscles), loss of normal bowel and bladder control (may include constipation, incontinence, and bladder spasms), numbness, sensory changes, spasticity (increased muscle tone), pain, weakness, and paralysis. Additional symptoms such as blood pressure problems, abnormal sweating, and trouble maintaining normal body temperature are commonly associated with injuries to the cervical and high-thoracic spinal cord.³⁴

When SCIs occur at the lower back level, varying degrees of symptoms can affect the legs: loss of normal bowel and bladder control, numbness, pain, sensory changes, spasticity (increased muscle tone), weakness, and paralysis.³⁴

TREATMENT AND CARE

Newly injured Veterans and Soldiers are typically referred to a VA SCI center for rehabilitation after being stabilized at a trauma center. Each year approximately 450 newly injured Veterans and active duty service members receive rehabilitation at VA's SCI centers. “SCI centers offer primary and specialty care by multidisciplinary teams to the 134 SCI primary care teams or support clinics at local VA medical centers. Each primary care team has a physician, nurse, and social worker, and those with support clinics may have additional team members. The VA integrates vocational, psychological, and social services within a continuum of care and addresses changing needs throughout the Veteran's life. VA provides equipment, supplies, preventive healthcare, and education for Veterans with SCI.”³⁶

MULTIPLE SCLEROSIS

DEFINITION

“Multiple sclerosis (MS) is a complex disease that affects the central nervous system (brain, spinal cord, and optic pathways).”³⁷ The disease damages the insulating material (myelin) that surrounds the nerve fibers in the central nervous system. When this insulation has worn off, damage occurs to the “nerve fibers of the brain or spinal cord, like in exposed wiring, and a sporadic connection can occur and cause a variety of symptoms.”³⁷

SYMPTOMS

MS is unpredictable, and some people experience a variety of symptoms that might progress over time. The disease is characterized by neurologic symptoms that appear rapidly over a few days and then improve to some extent over weeks, months, or other periods of time without new symptoms. “Some of the symptoms include extreme physical fatigue, numbness, loss of balance, blurred vision, poor coordination, feelings of muscle weakness and stiffness (spasticity), changes in thinking, and bowel and bladder problems.”³⁷

TREATMENT

Although currently MS is not a curable disease, several treatments are effective in reducing the frequency of relapses and may reduce the progression of symptoms over time. “Treatments for MS focus on controlling the immune system and managing the symptoms.”³⁷ By using a variety of drug therapies, often the healthcare team can reach the goal of reducing the frequency of relapses and slowing the progression of the disease. “MS symptoms can be managed with medication, physical therapy, mobility devices, and other self-care approaches.”³⁷

For a Soldier who may experience symptoms of MS in the military or “within seven years after honorable discharge, he or she may be eligible for service-connected disability.”³⁷ In this case, the Soldier should complete the Veterans Application for Compensation and/or Pension (VA form 21-526) available online (<http://www.va.gov>). Veteran service organizations, such as the Paralyzed Veterans of America, United Spinal Association, and Disabled American Veterans, are often helpful support resources.³⁷

AMYOTROPHIC LATERAL SCLEROSIS

DEFINITION

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord, often referred to as “Lou Gehrig’s Disease.”³⁸ “Amyotrophic comes from the Greek language:

- ‘a’ means no or negative;
- ‘myo’ refers to muscle; and
- ‘trophic’ means nourishment—‘No muscle nourishment.’

“When a muscle has no nourishment, it ‘atrophies’ or wastes away. ‘Lateral’ identifies the areas in a person’s spinal cord where portions of the nerve cells that signal and control the muscles are located. As this area degenerates it leads to scarring or hardening (‘sclerosis’) in the region.”³⁸ The progressive degeneration of the motor neurons in ALS eventually leads to their death. When the motor neurons die, the ability of the brain to initiate and control muscle movement is lost. With voluntary muscle action progressively affected, patients in the later stages of the disease may become totally paralyzed.³⁸

According to an article published in the August 17, 2010 *New York Times*, “researchers at the Veterans Affairs Medical Center in Bedford, Massachusetts, and the Boston University School of Medicine said the link between head trauma and symptoms that resemble amyotrophic lateral sclerosis may explain why ALS has been diagnosed in military veterans at high rates. The doctors said that the link between head trauma and an ALS-like disease suggests that the heightened risk would apply not just to collision-sport athletes, but Soldiers who sustain concussions and blast injuries.”³⁹

SYMPTOMS

“Early symptoms of ALS often include increasing muscle weakness, especially involving the arms and legs, speech, swallowing, or breathing. When muscles no longer receive the messages from the motor neurons that they require to function, the muscles begin to atrophy (become smaller). Limbs begin to look ‘thinner’ as muscle tissue atrophies.”³⁸

TREATMENT

Currently, no cure exists for ALS, but knowledge and treatment of the disease have increased substantially in the past years.³⁹ “Treatment focuses on relieving symptoms and maintaining an optimal quality of life. Treatment is based on individual therapy and the continual adaptation of medications.”⁴⁰

Riluzole (Rilutek, Sanofi Aventis, Bridgewater, NJ) is one of the few drugs so far proven to slow the effect of ALS. In addition, baclofen (Lioresal, Novartis, East Hanover, NJ) or tizanidine (Zanaflex, Novartis, East Hanover, NJ) help to relieve some of the tightening of the muscles, but they are not without side effects. Tramadol (Ultram, Biovail Corporation, Mississauga, Ontario, Canada) is often prescribed to help relieve pain.⁴⁰

“Physical therapy is an important part of treatment and helps to relieve cramping and muscular pain. Stretching helps to avoid permanent contraction of muscles (contractures) that may cause joint problems.”⁴⁰

POLYTRAUMA

DEFINITION

Polytrauma is defined as the occurrence of injuries to more than one body system.⁴¹ In combat, sources of blast injury include IEDs, artillery, rocket and mortar shells, mines, booby traps, aerial bombs, and rocket-propelled grenades. Considering the effects of explosions on the human body, it is not surprising that blast injuries are often “polytraumatic.” Injured body systems and structures include auditory/vestibular, eye, orbit, face, respiratory, digestive, circulatory, central nervous system, renal/urinary tract, extremity, soft tissue, and mental health. It has been estimated that more than 60% of blast injuries result in TBI. Consequently, the best practice for polytrauma requires a focus on TBI in the context of other injuries.⁴²

TREATMENT

The treatment goal of polytrauma and blast-related injuries “is to promote the successful rehabilitation, psychological adjustment, and community reintegration of Soldiers who have sustained these injuries.”⁴² The VA Polytrauma and Blast-Related Injuries Quality Enhancement Research Initiative program has both clinical and implementation goals. Its highest priority clinical goals are the following:

- “ensure that blast-exposed Veterans receive screenings and evaluation for high frequency ‘invisible’ problems, including TBI, PTSD, and other psychiatric problems, pain, and sensory loss (vestibular, hearing, and visual impairments);
- promote identification and evaluation of potential best practices for polytrauma rehabilitation, including practices that optimize care coordination and transitions across care systems and settings; and
- optimize caregivers’/family members’ ability to provide supportive assistance to Veterans with impairments resultant from polytrauma and blast-related injuries.”⁴²

Centers have been established and are working together to address the various needs of Soldiers with polytrauma injuries.

SUMMARY

Although this chapter outlines a variety of injuries and illnesses that leaders in WTUs may encounter, it does not address all of them. It is important that leaders take the time to learn about other illnesses and injuries not mentioned in this chapter and research the latest treatments and issues facing their Soldiers. The physicians and other members of the hospital staff are a great source of valuable information.

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LIEUTENANT COLONEL DANIEL J. DUDEK is the commander of the Warrior Transition Battalion (WTB) at Joint Base Lewis-McChord (JBLM), Washington. A wounded Warrior, Dudek was approved to remain in the Army due to the continuation on active duty program. As the WTB commander, he oversees the successful healing and transition of hundreds of wounded Warriors as they return to the regular Army or become successful civilian Veterans.

Dudek enlisted in the Army Reserves while in high school. After graduation, he completed Advanced Individual Training at Fort Lee, Virginia, as a parachute rigger. In 1992, he earned his commission through the Reserve Officers' Training Corps and was designated a Distinguished Military Graduate. Dudek served as a tank company fire support officer, a platoon leader, operations officer, field artillery intelligence officer, attack aviation battalion fire support officer, light infantry fire support officer, and battery commander. He also served as task force fire support officer observer trainer and senior fire support analyst.



Dudek attended various military schools including the Army Airborne School, Field Artillery Officer Basic Course, Field Artillery Advanced Officer Course, and Command and General Staff College. He holds a master's degree in computer resources and information management from Webster University and a bachelor of science degree in geography from Appalachian State University.



Dudek deployed to Iraq in 2007 with the 4th Brigade, 2nd Stryker Division; he was wounded in July 2007 and returned eventually to his rear detachment at JBLM. After working the rear detachment and going through the medical evaluation board process, Dudek assumed duties as the battalion executive officer at the JBLM WTB.

His awards and decorations include the Purple Heart, Meritorious Service Medal, three Army Commendation Medals, seven Army Achievement Medals, Army Reserve Component Achievement Medal, two National Defense Service Medals, Korea Defense Service Medal, Iraq Campaign Medal with Campaign Star, Global War on Terrorism Service Medal, Noncommissioned Officer Professional Development Ribbon, Army Service Ribbon, five Army Overseas Service Ribbons, Combat Action Badge, Parachute Rigger Badge, Parachutist Badge, and Air Assault Badge.

*What is most needed are people who are regularly,
habitually and deliberately kind—
people who make caring for others a personal devotion,
a part of their everyday lives.*

★ ★ ★

ERIC K. SHINSEKI
SECRETARY OF VETERANS AFFAIRS
VANGUARD, JULY/AUGUST 2010

CHAPTER SEVEN

Soldiers at Risk for Suicide or Medication Misuse

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INTRODUCTION

Continued technological advances in personal protective equipment along with improved and timely medical care have greatly improved the survival rate of Soldiers suffering from traumatic injuries acquired during Operation Iraqi Freedom and Operation Enduring Freedom.¹ The

majority of traumatic injuries sustained during these campaigns directly result from exposure to explosive devices. Consequently, survivors of these explosions often suffer from wounds of varying severity that can affect multiple organ systems. Therefore, survivors are often faced with a protracted recovery and rehabilitation process. Injury involving two or more body parts or systems, referred to as “polytrauma,” may result in cognitive, physical, psychosocial, and/or psychological impairments.² In the rehabilitation of post-9/11 combat Veterans, the concurrent presence of pain, traumatic brain injury, and posttraumatic stress disorder has been frequently noted and is now termed “the polytrauma clinical triad.” Each of the symptoms and conditions of the polytrauma triad is an individual risk factor for suicide. The coexistence of these three conditions has been noted to have a synergistically negative effect on suicide risk, making this population of patients especially vulnerable. Due to the complex interplay among these three conditions, optimal care of their symptoms and associated impairments requires the coordinated care of an interdisciplinary team of specialists.

RISK FACTORS FOR SUICIDE

Other volumes written shortly after the Persian Gulf War have previously addressed suicide among military members in both combat and peacetime settings. The warning signs discussed in those manuals are still appropriate screening tools for assessing suicide risk among military members. However, existing screening exams are mostly geared toward inpatient psychiatric settings. As a result, their efficacy in reducing mortality or morbidity among patients in all settings remains equivocal. Current efforts to develop an effective screening tool for suicide in other settings have been unsuccessful. Therefore, identifying risk factors, timely recognition and treatment for coexisting conditions, and coordinated medical care is vital to reduce the likelihood of suicide (Exhibit 7-1 and Exhibit 7-2).

COMMON PAIN MEDICATION USAGE AND RISKS

Pain severity and its subjective component of suffering can be intensified by the coexistence of traumatic brain injury or posttraumatic stress disorder. The mainstay of managing pain is pharmacologic, often involving the use of medications with high abuse potential. In a population with preexisting psychological vulnerabilities, the risk of drug abuse and suicide is greatly increased. Furthermore, a significant overlap of symptoms often exists in this patient

EXHIBIT 7-1. *Risk Factors for Suicide*

DEMOGRAPHIC	Age 65 or older Males have higher rates of successful suicide (via more lethal means); females have higher rates of attempts Protestant Single, divorced, living alone
CLINICAL	Psychiatric diagnosis Depression Alcohol or drug abuse Severe anxiety Borderline personality disorder Amnesia Attention deficit hyperactivity disorder Dementia Eating disorders Impulse control disorders Learning disability Panic disorder Posttraumatic stress disorder Schizoaffective disorder Schizophrenia
	Chronic medical condition Pain Terminal illness Acquired Immunodeficiency Syndrome Hopelessness Previous suicide attempts Poor achievement Poor insight Blunted or poorly controlled affect Poor rapport Socially isolated Recent adverse event Family history of suicide attempts/completions Presence of suicidal ideation History of deliberate self-harm

population that makes the identification and treatment of pain challenging for an individual healthcare provider. Optimizing treatment and management of pain is best accomplished in an interdisciplinary setting through the collaborative efforts of multiple specialists. Utilizing a “Soldier-centered” approach, the Soldier becomes a part of the healthcare team and is actively involved in the care plan. The Soldier’s active participation in goal setting and decision making makes it more likely that a Soldier’s pain will be assessed and treated appropriately. In this context of many eyes viewing the Soldier from different perspectives, issues of substance abuse are more likely to be noticed and addressed in the early stages. As a part of an interdisciplinary team, the healthcare provider may optimize function while remaining vigilant to the warning signs of drug abuse and suicide.

EXHIBIT 7-2. *Warning Signs of Suicide*

-
- Has untreated or uncontrolled depression (ie, hopelessness, helplessness, anger, loss of interest in activities one previously found enjoyable, change in sleeping or eating habits, poor work or school performance, feelings of guilt or shame)
 - Speaks or writes about suicide or death
 - Displays impulsive or reckless behavior
 - Feels that he or she has no way out of a situation
 - Gives away prized possessions
 - Purchases a firearm in a sudden or impulsive manner
 - Obtains other means of killing oneself such as poisons or medications
 - Shows unexpected rage or anger
-

Initiating a medication treatment plan for pain management should always begin with a thorough evaluation of the patient history, including preinjury state of health, social and psychiatric history, details of trauma and its associated impairments, and medical workup in an attempt to identify a pain-generating lesion that resolves with medical intervention. Given the diversity of patients and their injuries, nearly all classes of medications are represented in the Warrior Transition Command population. Some pain medications or adjuncts are deemed controlled substances, and they are regulated by the government because of the potential for addiction, abuse, physical and mental harm, and dangers from actions of those who have used these substances inappropriately. Opioids and benzodiazepines are two frequently prescribed classes of medications from the list of controlled substances that merit special attention.

OPIOIDS

Opioids are the natural or synthetic derivatives of the poppy plant (Exhibit 7-3). Opioid use can be dangerous for a number of reasons. Particularly, opioids cause sleepiness and diminish the signals from the brain to the lungs telling the body to breathe. Opioids are also associated with a high abuse and addiction potential because of the intoxicating euphoria produced by some drugs in this class. Concurrent use with other medications, illicit/recreational drugs, or alcohol may produce an additive effect that may result in death. Chronic use of opioids can lead to changes in physiological processes including the endocrine system. It is not unusual to see sleep disturbances, depression and cognitive impairment, hormonal imbalances leading to menstrual and ovulatory irregularities, decreased testosterone and other sex hormones, and infertility in both sexes.

Despite such disadvantages, many patients may benefit from a trial of opioid therapy after a treatment plan and functional goals are agreed upon. This is particularly true for patients in whom a specific pain-generating

EXHIBIT 7-3. *Opioids*

ORAL FORM

(tablets, capsules, liquid, lozenges, suckers, rapidly dissolving formulations)

- Buprenorphine (Buprenex)
- Codeine
- Fentanyl (Actiq, Fentora, Onsolis)
- Hydromorphone, short-acting (Dilaudid)
- Hydromorphone, long-acting (Exalgo)
- Levorphanol (Levo-Dromoran)
- Meperidine (Demerol)
- Methadone (Dolophine, Methadose)
- Morphine, short-acting (MS IR, Roxanol)
- Morphine, long-acting (Avinza, Embeda, Kadian, MS Contin, Oramorph SR)
- Nalbuphine (Nubain)
- Oxycodone, short-acting (Oxy IR, OxyFast, Roxicodone)
- Oxycodone, long-acting (Oxycontin)
- Oxymorphone, short-acting (Opana)
- Oxymorphone, long-acting (Opana ER)
- Pentazocine/Naloxone (Talwin NX)
- Propoxyphene
- Tapentadol (Nucynta)
- Tramadol, short-acting (Rybix ODT, Ultram)
- Tramadol, long-acting (Ryzolt, Ultram ER)

Additionally, there are numerous brand name combinations of the opioids above with medications such as Tylenol (acetaminophen) and Motrin (ibuprofen). The following medications are all combinations and carry the risk of the patient accidentally ingesting too much of the secondary medication if the opioid dose is increased. It is often better to prescribe Tylenol or Motrin separately to ensure the patient does not overdose.

- Balacet, Combunox, Darvocet, Endocet, Fioricet, Fiorinal, Ibudone, Lorcet, Lortab, Magnacet, Maxidone, Norco, Panlor, Percocet, Percodan, Primalev, Reprexain, Roxicet, Synalgos-DC, Talacen, Tylenol #3, Tylenol #4, Tylox, Ultracet, Vicodin, Vicoprofen, Zamiset, Zerlor, Zydone

INTRANASAL

- Butorphanol

TRANSDERMAL (skin patches)

- Fentanyl (Duragesic)

INTRAMUSCULAR INJECTIONS, intravenous injections or drips, epidural delivery, and intrathecal delivery (spinal medication system such as a pain pump)

pathology cannot be identified, or for those whose pain is not relieved with nonopioid medications.

Initiating medication therapy with opioids requires the provider and patient to constantly seek to balance benefit of treatment to risk of adverse effects. “Start low and go slow” is a good rule to apply in opioid prescribing because starting a patient on too high a dose, increasing a dose rapidly, or decreasing a dose rapidly can all result in death. Methadone is often used for pain management, but it has been associated with many deaths, requiring responsible patients and experienced vigilant clinicians for good outcomes.

BENZODIAZEPINES AND OTHER CENTRAL NERVOUS SYSTEM DEPRESSANTS

Another class of controlled substances with the potential for abuse, addiction, and interactions with other medications, street drugs, and alcohol are benzodiazepines. This class of medication works by decreasing the excitability of neurons in the brain. Benzodiazepines are used to treat a wide range of problems commonly seen in patients with any element of the polytrauma triad including anxiety, panic disorder, seizures, agitation, insomnia, muscle spasms, and even alcohol withdrawal symptoms. However, the beneficial properties of these medications also make them problematic when misused and can cause excessive sedation, muscle weakness, hypotension, and decreased respiratory drive.³ Many similarities exist between benzodiazepines and opioids. Like opioids, benzodiazepines can be dangerous because they have a depressant effect on the central nervous system. Benzodiazepines can be classified according to onset and duration of action into short, intermediate, or long-acting groups (Exhibit 7-4), allowing different drugs within each class to be prescribed for various conditions.

Long-term use of these medications can lead to nausea, headaches, aggression, memory problems, decreased libido, and depression.^{4,5} Like opioids, benzodiazepines are also associated with tolerance, dependence, addiction, and aberrant drug-related behaviors. Healthcare providers must remain attentive to the signs and symptoms of those conditions and take appropriate action if necessary.

EXHIBIT 7-4. *Benzodiazepines*

SHORT ACTING

- Triazolam (Halcion, Rilamir)
- Midazolam (Versed, Hypnovel)

INTERMEDIATE ACTING

- Alprazolam (Xanax, Alprox)
- Lorazepam (Ativan)
- Oxazepam (Serax)
- Temazepam (Restoril, Normison, Temaze)

LONG ACTING

- Chlordiazepoxide (Librium, Tropium)
 - Clonazepam (Klonopin, Rivotril)
 - Clorazepate (Tranxene)
 - Diazepam (Valium, Apzepam)
 - Flurazepam (Dalmene, Dalmadorm)
 - Quazepam (Doral)
-

DEPENDENCE, ADDICTION, WITHDRAWAL, AND DIFFERENTIATING BETWEEN UNDER-TREATMENT AND ABERRANT DRUG-RELATED BEHAVIORS

Several elements of opioid therapy merit particular attention: dependence, addiction, withdrawal, and differentiating between under-treatment and aberrant drug-related behaviors. Opioid dependence is a physiological process that is commonly observed and is normal during treatment. Because of its continual presence, the body often becomes more efficient at metabolizing the medication and its byproducts. As a result of this efficiency, the patient may need periodic changes in medication dosage or frequency to provide the same pain relief as originally provided in smaller or less frequent dosages. Once the Soldier becomes physically dependent on opioid medications, a rapid decrease or cessation of the medication will lead to withdrawal symptoms.

Addiction occurs when Soldiers who habitually use opioid medications (1) begin to endanger the health, safety, or welfare of themselves or others, or (2) have lost the power of self-control with reference to their addiction. Due to its complexity, treatment of addiction and its related disorders should be deferred to experts from medical and behavioral health-related fields that have undergone specialized training in addiction medicine.

Physicians who are addiction specialists are represented by the American Society of Addiction Medicine. Excellent resources regarding opioid addiction are available at www.asam.org.⁶ Several related and commonly used terms with which providers should familiarize themselves are provided in Exhibit 7-5.

EXHIBIT 7-5. *Addiction Terminology*

ADDICTION: Chronic, relapsing disease with loss of control involving pursuit and use of habit-forming substances, despite adverse health, social, and legal consequences to the individual. It is also characterized by changes in the brain, tolerance, and physiological symptoms upon withdrawal.

PSEUDOADDICTION: Patient exhibits behaviors suggesting addiction to a habit-forming substance; associated with inadequate treatment of pain and resolves once pain is controlled.

DEPENDENCE: Chronic changes in the patient's body as it adapts to the continued presence of higher doses of medications such as opioids. The brain and body require the presence of the medication to function well. Without the medication, the patient has withdrawal symptoms.

TOLERANCE: The body's natural response to repeated medication use that requires the patient to consume larger amounts of the medication to get the same effect (pain relief) as a smaller dose previously provided.

PSEUDOTOLERANCE: When it is necessary to increase the dosage/frequency of a medication because of new or progressing disease, poor compliance, increased physical activity, change in medication, or initiation of medication that affects the metabolism of the pain medication.

EXHIBIT 7-6. *Aberrant Drug-Related Behaviors*

-
- Borrowing/stealing another patient's drugs
 - Increasing medication dosage or frequency without medical recommendation
 - Hoarding drugs during pain-free periods
 - Requesting specific drugs or aggressively requesting dose escalation
 - Repeatedly "losing" prescribed medications
 - Seeing multiple providers specifically for pain complaints ("doctor shopping")
 - Intravenously injecting substances prescribed for oral use
 - Concurrently using similar illegal drugs
 - Repeatedly requesting refills before the prescribed refill time
-

Data source: Gironde RJ, Larke ME, Massengale J, Walker RL. Pain among veterans of Operations Enduring Freedom and Iraqi Freedom. *Pain Med.* 2006;7(4):339–343.

EXHIBIT 7-7. *Monitoring Recommendations for the Patient on Opioid Therapy*

-
- Periodically reassess patient for pain intensity and progress with regards to functional goals, adverse events, and compliance with therapies
 - Conduct periodic urine drug screening for patients demonstrating aberrant drug-related behaviors to evaluate compliance and use of nonprescribed/illicit drugs
 - Consider less frequent evaluations and urine drug screening to evaluate compliance for low-risk patients who may benefit from less monitoring
-

Data source: Chou R, Fanciullo GJ, Fine PG, Adler JA, Ballantyne JC, Davies P, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain.* 2009;10(2):113–130.

Differentiating between inadequately controlled pain and aberrant drug-related behaviors associated with addiction (Exhibit 7-6) can be a challenge for the healthcare provider. Soldiers with inadequately controlled pain—termed pseudoaddiction—may exhibit aberrant drug-related behaviors. However, in patients with inadequately controlled pain, such behaviors cease once adequate pain control is achieved.⁷ Patients with pseudoaddiction may erroneously be labeled as addicts or drug seekers. Such a situation may be avoided through close collaboration between the patient and provider in identifying measurable functional goals and means to achieve them through judicious use of medication. This allows the provider to better recognize the signs most consistently associated with addiction, such as Soldier complaints regarding loss of control with drug use, compulsive use of medication beyond the prescribed dose despite adequate pain relief, or the potential for self-harm.⁸

Consensus guidelines from the American Pain Society recommend several key measures to facilitate the appropriate management of the chronic pain patient (Exhibit 7-7). Additionally, the Department of Veterans Affairs has

published a clinical practice guideline further detailing patient selection, risk stratification, and best evidence guidelines regarding chronic opioid therapy.⁹

SUMMARY

Recent studies have shown that approximately 82% of Operation Enduring Freedom/Operation Iraqi Freedom Veterans were significantly affected by pain, 68% also affected with posttraumatic stress disorder, and 10% to 20% suffered traumatic brain injury.^{10–12} When these known risk factors coexist in an individual such as the polytrauma patient, it has a synergistic effect on suicidality. Because existing screening tools have been inadequate thus far in decreasing the rate of suicide among service members, proper management of risk factors is essential. Pain syndromes in injured Soldiers can be complex, multifactorial, and chronic, and obtaining good control of their pain can be difficult. Opioids and benzodiazepines are commonly utilized pharmacologic agents in the treatment of the mainstay of pain management in this population; however, care must be taken to minimize side effects while effectively controlling pain. Due to the known abuse potential for these drugs, health-care providers must also remain vigilant in detecting signs and symptoms of abuse, misuse, tolerance, addiction, and dependence. Warrior Transition Command Soldiers often have other significant physical and psychosocial needs including but not limited to posttraumatic stress disorder and traumatic brain injury. Because such factors may hinder successful management or contribute independently as a risk factor for suicide, timely recognition and prompt treatment of these associated conditions are also necessary for patient progress. For a patient population with an increased risk for suicide, optimal management is best accomplished through the collective vigilance and cooperative efforts of an interdisciplinary care team.

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THE HONORABLE GORDON H. MANSFIELD was the Deputy Secretary and Chief Operating Officer of the Department of Veterans Affairs (VA) from 2004 until 2009. He served as Acting Secretary of Veterans Affairs from October 1, 2007, until December 20, 2007. As Chief Operating Officer, Mansfield had direct oversight of all of the VA's business operations. A highlight of his tenure was the largest information technology reorganization within the federal government, which included electronic health records, an automated claims processing system, and the new GI Bill benefits program. Mansfield supervised the VA's multibillion dollar construction program to build clinics, regional offices, medical centers, and cemeteries. He personally oversaw efforts to rebuild the medical center in New Orleans following Hurricane Katrina. Mansfield's responsibilities also included facilitating the VA's relationship with the Department of Defense. He co-chaired the VA/Department of Defense Wounded Ill and Injured Senior Oversight Committee and the Joint Executive Council.



From 2001 to 2004, Mansfield served as the VA Assistant Secretary for Congressional and Legislative Affairs, functioning as the senior legislative advisor to the Secretary of Veterans Affairs and representing the VA's programs, policies, investigations, and legislative agenda to Congress. Before joining the VA, Mansfield was the executive director of the Paralyzed Veterans of America (PVA), an organization that represents and advocates for paralyzed Veterans. As the executive director, he oversaw daily operations of PVA's national Washington, DC, office. Mansfield held several positions at PVA from 1981 to 1989.

Before serving as PVA's executive director, Mansfield served as Assistant Secretary for Fair Housing and Equal Opportunity at the Department of Housing and Urban Development from 1989 to 1993. Before 1981, he practiced law in Ocala, Florida.

Mansfield received his undergraduate degree from Villanova University and law degree from the University of Miami. He enlisted in the US Army in 1964 and served two tours of duty in Vietnam. While serving as a company commander with the 101st Airborne Division during his second tour, he was wounded during the Tet Offensive of 1968, sustaining a spinal cord injury. For his actions under fire, he was decorated with the Distinguished Service Cross. He was medically retired at the rank of Captain. Mansfield's other combat decorations include the Bronze Star, two Purple Hearts, the Combat Infantryman's Badge, and the Presidential Unit Citation. He was inducted into the Army Ranger Hall of Fame in 2007 and the US Army Officer Candidate School Hall of Fame in 1997.

We were a crowd of scientists. We thought that we knew something about how to make and fit artificial limbs and how to train people to use them. But when we really got into the problem, we found we didn't know the basic principles. . . . The Bureau of Standards never did manage to design a machine to test the durability of artificial legs. A leg would stand up indefinitely under terrific pressure; and then you put it on a man and he would break it down in two or three months.

★ ★ ★

A QUOTE FROM

*RING THE NIGHT BELL: PAUL B. MAGNUSON—
AN AMERICAN SURGEON'S STORY*

DESCRIBING THE CIRCUMSTANCES DURING WORLD WAR II
WHEN THE MILITARY HEALTHCARE PROFESSIONALS WERE TRYING TO HELP
SOLDIERS WITH LIMB AMPUTATIONS CONTINUE ON ACTIVE DUTY OR
SUCCESSFULLY REINTEGRATE INTO THE COMMUNITY.

CHAPTER EIGHT

Assistive Technology, Accessibility, and Universal Design

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INTRODUCTION

Assistive technology (AT) can significantly benefit Soldiers with disabilities. Interventions resulting from AT are liberating for Soldiers with disabilities. AT assists Soldiers with various functions from using a computer, to wheelchairs, prosthetic limbs, adapted motor vehicles, and robotics. A brief description of some of the most common technologies of benefit to wounded, ill, or injured Soldiers will be presented in this chapter. A professional trained in its application and usage should apply AT. A clinical team approach including a therapist, engineer, physician, and—for the case of cognitive technologies—a rehabilitation counselor or psychologist often yields the best results.

DRIVER REHABILITATION

One form of AT is driver rehabilitation. Driving provides many Soldiers a means of independent transportation for traveling in their community. Beyond access to work, school, spiritual services, and healthcare, family members who drive support many needs within the household to assist with purchasing goods, transporting loved ones to leisure activities, and uniting families on important occasions. The role of driving is thus considered to be an instrumental activity of daily living (IADL).¹

The assessment of driver capability and performance mainly rests with a driver rehabilitation specialist or Certified Driver Rehabilitation Specialist (CDRS).² Occupational therapists are often the clinicians who seek the certification, although the occupational therapy background is not a requirement.³ In determining fitness to drive, no specialization is required for clinicians or therapists to complete the first screening or predriver's assessment.⁴ The CDRS credential is preferred for conducting on-road evaluations to complete the comprehensive assessment of driver capability. Two values are upheld within driver rehabilitation: (1) maximizing the length of time that Soldiers and Veterans maintain independent transportation, and (2) justifying safe driving through the demonstration of good driving

performance without strict control on the strategies used to operate and control the vehicle.^{5,6} In this way, assessment is basically an evaluation of safe driving performance in repeatable and robust strategies.

The Department of Veterans Affairs (VA) system operates more than 40 driver rehabilitation centers. Additional arrangements are available at VA locations without programs to refer eligible service members to either the nearest VA with a center or a locally available non-VA program with a contractual agreement.⁷ The VA's Prosthetic and Sensory Aids Service may also assist with driving-related needs and provisions.

PRINCIPLES AND PERSPECTIVES FOR DRIVING EVALUATION

The evaluation of medically impaired drivers for fitness to drive introduces multiple perspectives from occupational therapy, driver education, disability studies, and AT, including driver rehabilitation, that involve driver safety, performance, and capability. Safety can relate to behaviors or techniques for vehicle control that produce safe vehicle operation. Along with operation of a vehicle, the judgment and reasoning behind driver decisions are a focus of driver safety and performance. Capability should be considered as a foundational level of ability to drive independently, and performance should be considered as the continuum of proficiency in safe driving with respect to the driving environment and vehicle.

These concepts build on more fundamental questions about a Soldier's values, interests, habits, life roles, physical surroundings, societal attitudes, and body function.¹ When deciding whether rehabilitation is possible, the CDRS considers the Soldier's processing capability to learn skills and rules to minimize decision-making/reaction times to a level suitable for his or her driving environment.^{1,7}

PATHWAYS THROUGH DRIVER REHABILITATION PROGRAMS

Driver rehabilitation specialists receive certification from the Association for Driver Rehabilitation Specialists. Under the services offered, a specialist may provide predriver's screening, behind-the-wheel evaluation (classified further as off-road and on-road), prescriptions for adaptive equipment with vehicle modification, vehicle inspection for installation of adaptive equipment, and counseling about alternative transportation methods for community mobility.⁴ The vehicle inspection service may also provide consultation to address individuals who wish to ride as passengers in a vehicle, or general consultation on storing additional mobility devices in the vehicle. Although clinical assessments can be performed by all licensed therapists, only a specialist can perform the behind-the-wheel evaluation (on-road).^{1,7} A Soldier



FIGURE 8-1. *Adaptive driving simulator. Copyright 2010 DriveSafely, Inc. All rights reserved.*

who only plans to be a passenger in a vehicle will still find help from a specialist in options for adaptive equipment and general safety.⁴

Building on models of driving, a driver rehabilitation program uses a phased approach to assess fitness to drive.⁷ Each step increases the exposure to complexities of the actual driving task on roads most reflective of a Soldier's environment and common destinations. Clinical assessments involve measures covering the upper and lower extremities of the body regarding vision, perception, cognition, strength, coordination, sensation, balance, fatigue, and comprehension of state driving laws/traffic signs.⁷ A Soldier may progress to behind-the-wheel evaluation when a clinical—or predriver's—assessment meets or surpasses all state minimum standards and he or she demonstrates proper behaviors and attitudes through compliance with instructions from the driver rehabilitation specialist. The driving evaluation progresses according to the Soldier's demonstrated capabilities. Before testing on high-traffic roads, there may be options to complete trials on a driving simulator (Figure 8-1), review skills in a parking lot, or return gradually on low-traffic roads with varying levels of control over the vehicle's steering, acceleration, and braking.

With sufficient performance on an off-road evaluation, a Soldier may proceed toward on-road evaluation. At this point, the driver rehabilitation

specialist or CDRS determines the option of driving interventions. Driving performance may indicate that a Soldier should stop driving or that he or she is fit to resume driving with no further interventions. Driver rehabilitation specialists are required to provide counseling to Soldiers who are recommended to cease driving.⁴ Primary care physicians or any specialists with specific knowledge of medical conditions associated with a decline in driving capability are responsible for reporting medically impaired drivers.

DRIVER REHABILITATION SERVICES AND VEHICLE MODIFICATIONS

Three forms of intervention reflect the main groups of driver needs in evaluation and training⁷:

1. New or prospective drivers who need extensive training with or without vehicle modifications;
2. Experienced drivers who do not need modifications but are considered for remediation; and
3. Experienced drivers who require vehicle modification with compensations to driving use adaptive equipment.

In addition to compensation, driver rehabilitation programs must also provide retraining because any vehicle modification requires a restricted license and automatic retesting at the department of motor vehicles before discharge from the program and prescription of the adaptive equipment.⁷ Soldiers who undergo any training have progress logs to document the level of independence, safety, control, and comfort with their strategy for operating a motor vehicle.

When standard vehicle controls cannot accommodate a Soldier's functional abilities, multiple options are available for adaptive equipment. Most vehicle modifications are designed for primary or secondary controls: the primary controls include steering, gas, and brake interfaces; and the secondary controls consist of the additional driving interfaces that control radio, air conditioning, and other features of the vehicle unrelated to driving the vehicle.⁸ The cost or complexity of the modifications varies according to the Soldier's degree of functional limitation. At the high end of vehicle modification, Soldiers can drive directly from a power wheelchair with proper restraints and use high-end equipment to operate primary and secondary controls. Soldiers can confirm proper control after installation with the assistance of the driver rehabilitation specialist in a final vehicle checkout.⁴ This step ensures that the installation matches the prescription and configuration used during training.

REPORTING AND CONTRIBUTING TO THE LICENSING DECISION

The driver rehabilitation program report is generally sent to the referring physician (or concurring physician for self-referral clients) and possibly the primary care physician. In many cases, the report also is sent to the funding source, including vocational rehabilitation programs, insurance companies, worker's compensation, or legal representation for an accident victim. A report will always be sent to the medical unit of the state department of motor vehicle services whenever action is initiated by a review of licensing status pending suspension or revocation. State laws vary for mandatory physician reporting rules, but a driving rehabilitation specialist's report usually requires the concurring signature of the physician requiring or approving the evaluation.

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

Another form of AT is augmentative and alternative communication (AAC). An estimated 2.5 million Americans experience speech disability to the extent that they have significant difficulty being understood by others. Many people have no speech and also have another physical disability that precludes expressive communication using hand signs, writing, or typing.⁸ The inability to effectively communicate can have severe detrimental effects on personal, social, educational, and vocational interactions as well as overall quality of life.

AAC addresses the expressive communication needs of individuals with significant disabilities in natural speech generation.⁹ The goal of AAC is the most effective communication possible. The two most important values expressed by people who rely on AAC include the following: (1) saying exactly what they want to say, and (2) saying it as fast as they can.¹⁰ Use of AAC technology improves the quality of life in diverse groups of individuals of all ages and socioeconomic, ethnic, and cultural backgrounds from children as young as 32 months, adolescents and adults with developmental disabilities, to adults with amyotrophic lateral sclerosis, aphasia, and various acquired neurologic conditions.¹¹⁻¹⁴

In the simplest terms AAC interventions fill two categories: (1) unaided methods, and (2) aided methods. Unaided communication systems require no other pieces of equipment and rely on the user's body to convey messages. Examples include gestures, body language, facial expressions, pantomime, pointing, eye gaze, and/or sign language. Aided communication systems require the use of some type of external tool or equipment in addition to the user's body and can be further separated into three groups: (1) low-technology (no power) devices, (2) light-technology devices, and

(3) high-technology devices.

Low-technology devices, which have no electronics, include communication notebooks and alphabet, symbol, or picture boards where the user points to the letters, words, symbols, or pictures that show what he or she wants to say. People can point with their finger or a stick, or look specifically at a word or picture with their eyes. Light-technology devices include light pointers, voice output switches, and simple powered displays.



FIGURE 8-2. *An augmentative and alternative communication device.*

High-technology devices (Figure 8-2) include various types of more complex electronic communication aids that allow use of picture symbols, letters, and words and phrases to create messages. Some devices can be programmed to produce voice output (speech-generating devices or SGDs) and written output, with some devices accomplishing these in multiple languages. The majority of users—regardless of their limitations—can access these systems. Input can be obtained in various ways from using hand dexterity and manipulating the keyboard, to utilizing eye gaze, and even brain–computer interfaces. High-technology devices can be considered either dedicated or nondedicated. Dedicated devices are used solely for communication; nondedicated devices integrate AAC technology with various other functions such as computer access, e-mail, calendar, and telephone. AAC language software applications have recently been incorporated into some cell phones and personal digital assistants to benefit highly mobile end users. AAC technology is selected to support optimal communication first and address all other issues only after this is accomplished, truly portraying the mantra of “language first, technology second.”

As technology advances, it is tempting to opt for the most advanced system available; however, this does not always lead to ease of use. An improperly prescribed device can lead to abandonment of the AAC system and withdrawal from everyday life. Research has shown that many individuals receive an unsystematic or idiosyncratic approach to AAC system selection.¹⁵ The model for matching the person with technology systematically integrates personal, clinical, and external evidence into the AAC assessment.¹⁶ An integral component in the selection of the most appropriate system involves a Soldier-centered, systematic evaluation by a

team of qualified professionals from various disciplines, including speech and language pathologists, educators, occupational therapists, physical therapists, rehabilitation engineers, psychologists, and other medical personnel.

COMPUTER ACCESS

Alternative Text Entry Devices

Alternatives to the traditional keyboard can be physical devices or “virtual” devices presented on a computer screen. Physical keyboards vary in size and shape to accommodate limited reach or restricted joint flexibility.^{17,18} Figure 8-3 shows a number of alternative physical keyboard options. Alternative keyboard designs, which bear little resemblance to traditional keyboards, can be expensive, often result in slower typing, and can have significant learning curves.

It is possible to touch-type with one hand on a regular keyboard with no overlays or assistive devices. However, typing with one hand on a standard keyboard can be slow, and it is hard to reach all of the keys without losing the “home base” position.¹⁹ Single-handed users may benefit from using smaller keyboards that present keys in a more compact area and, therefore, require less movement.^{17,19}

Several alternative designs for one-handed keyboards are available. The Half-QWERTY uses the same kinds of keys as a regular keyboard, but each key can generate either of two characters depending on whether a mode



FIGURE 8-3. Computer interface (keyboards).

key is depressed.²⁰ One-handed chord keyboards use combinations of keys (with each combination referred to as a “chord,” like a chord on a piano) to generate all of the letters, punctuation marks, and digits as a traditional keyboard with a fraction of the number of keys.^{19,21,22} Chord keyboards thus require less overall hand and arm movement but increased coordination and fine-motor control.^{18,22}

On-screen (or “virtual”) keyboards are software-based keyboards presented directly on the computer screen.¹⁸ On-screen keyboards, which are familiar to anyone who has entered text into a cell phone without a physical keypad, can be operated by a pointing device or switch and allow the Soldier to use a single device for computer control.

Automatic Speech Recognition

Automatic speech recognition (ASR) software converts spoken input into text. ASR can be used for hands-free control of the computer or in conjunction with other text entry and pointing devices. Users are often disappointed at the text entry rate they achieve with ASR. Selecting and formatting text, editing text, and correcting errors when the ASR system misrecognizes one or more words is a slow process by voice. These factors conspire to reduce a user’s actual text generation rate to no more than 30 words per minute.²³

Alternative Pointing Devices

Numerous alternatives to the standard computer mouse include trackballs, track pads, and joysticks. Hand, foot, or head movements operate pointing devices. The principal alternative to traditional mouse buttons is dwell-clicking software, which allows the user to activate mouse operations (eg, left click, right click, drag) by holding the mouse cursor still over a target for a specified amount of time. It is also possible to operate a computer using just the keyboard, without any pointing device.^{24,25} Using the keyboard removes the need for the Soldier to move his or her hands from the keyboard to the mouse, eliminates the need to target small items on the screen, and is often faster than using the mouse.²⁵

Screen Magnifiers, Screen Readers, and Braille Displays

Soldiers with limited functional vision can use a screen magnifier that presents an enlarged view of a portion of the screen.¹⁸ Computer users who are blind interact with the computer through screen reader software that provides a verbal description of the screen.¹⁸ Screen reader software requires significant training to use effectively. Screen readers can also be used in combination with a Braille display that translates text on the screen into Braille. Soldiers with limited visual impairment can take advantage of several settings within

the Microsoft Windows and Macintosh operating systems. The screen resolution can be lowered to increase the size of objects on the screen. Both the Microsoft Windows and Macintosh operating systems also include high-contrast color schemes.

Eye-Gaze and Brain-Computer Interfaces

Two areas of active research in computer access are eye-gaze and brain-computer interfaces. Eye-gaze technology is used to access computers and augmentative communication devices, but the technology remains expensive and challenging to use.²⁶ Brain-computer interfaces are not yet commercially available, but hold significant promise for Soldiers with the most severe disabilities.²⁷

ORTHOTICS

Orthotics, another form of AT, can be perceived as an externally applied device that improves function by controlling motion, correcting flexible deformities, and/or preventing progression of fixed deformities. Some typical orthotic devices include HALOs (which are an external fixation type of orthosis), back braces, knee braces, and shoe inserts. Orthotics can be classified in two functional systems: (1) static orthoses, and (2) dynamic (functional) orthoses. Static orthoses, which restrict movement of a joint or bone, prevent further damage to a body part and help with the healing of a joint or bony structure. An example of static orthotic is a fracture brace used instead of or after a cast to help prevent movement until the bone fully heals. Dynamic (functional) orthoses are devices that support a joint throughout specific movements. Springs, pins, and cables are some of the components that can be used to control, assist, or restrict certain movements across the joint.²⁸ Many orthoses can be made to have both static and dynamic functions, which make it possible to resist motion at one joint while allowing a certain movement at another. The type of orthoses used depends on the site of injury or weakness, and many of these devices are custom made to ensure an intimate fit.

SPINAL ORTHOTICS

Spinal orthotics include several types of braces to provide support to weakened or injured muscles and ligaments or prevent movement of fractured or misaligned bony segments. These devices are also used postoperatively to immobilize the spine. Spinal orthotics are available in various materials depending on the Soldier's needs. Some are flexible and allow movement whereas others are rigid and allow little or no movement throughout the



FIGURE 8-4. *Spinal orthosis.*

torso or neck. Spinal orthotics can be the “off the shelf” type that are prefabricated and fit to various sized individuals (Figure 8-4), or they can be custom made, in which a mold is taken and an exact-size orthotic is fabricated. The spinal orthotic can be low profile or large depending on the material and function. Some orthotics made from more flexible materials can be worn under the outer garments. These orthotics support weak musculature and prevent pain. Cervical collars are used to restrict or stabilize the cervical vertebra (neck), and they are commonly used when there is a muscular strain or weakness. A HALO is used for cervical spine instability and/or cervical fractures and incorporates a locking system that extends to the head. Commonly pins are attached to the brace and screwed slightly into the skull; this prevents any movement and is usually done following surgery in the case of a trauma to the neck.



FIGURE 8-5. *Wrist-hand orthosis.*

UPPER EXTREMITY ORTHOTICS

Upper extremity orthotics involve the hand, wrist, elbow, and shoulder. These orthotics can restrict or facilitate motion, stabilize, or increase strength in one or all of these upper limb parts. Most of these orthotics are used temporarily after fractures, surgery, and recovery. The small percentages of long-term users usually have a permanent and/or degenerative condition such as a spinal cord injury or rheumatoid arthritis. Long-term orthotics are usually custom-made, whereas a majority of the short-term devices are prefabricated and fit directly off the shelf. Static orthoses primarily maintain a certain position to prevent deformities, stabilize a joint, protect weak muscles, and support structures after surgery. Dynamic orthoses are used when some motion or function of a joint is lost. One type of dynamic wrist-hand orthosis is a wrist-driven (tenodesis) orthotic that helps the Soldier grasp certain objects using the wrist joint (Figure 8-5). When the wrist is extended, it causes the fingers to flex. The wrist can be locked in this position if necessary. Several other orthotic devices can incorporate the elbow and shoulder to assist and allow some type of movement.

LOWER EXTREMITY ORTHOTICS

Lower extremity orthotics are the most commonly used orthotic devices. Lower limb orthotics, which enhance function from various lower limb deficits, exist for everything from the hip down to the toes. Shoes, inserts, ankle-foot orthotics, ankle braces, and knee braces are some of the devices commonly prescribed for various conditions. Lower limb orthotics can be functional, accommodative, or corrective. The ankle-foot orthosis



FIGURE 8-6. *Ankle-foot orthosis.* FIGURE 8-7. *Hip-knee-ankle-foot orthosis.*

(Figure 8-6) is one of the most commonly used tools in orthotic treatment. Mechanical ankle-foot orthoses control the ankle and influence the knee joint to assist ambulation of the individual.²⁸ As in most cases, these orthotics are made using metal, carbon fiber, plastic, or a combination of materials depending on the Soldier's needs. Some factors that influence the decision of what materials to use include the Soldier's weight, strength, activity level, and predisposing conditions. The ankle-foot orthosis can be lengthened over more joints to give even more control of the lower limb such as the knee by using a knee-ankle-foot orthosis or the hip by using a hip-knee-ankle-foot orthosis (Figure 8-7). Foot orthotics, which accommodate or prevent further injuries or deformities of the foot, are normally placed inside the shoe, and the shoe also becomes a part of the orthosis. Custom shoes are made in some cases to fully accommodate foot deformities. Many persons with diabetes use these types of orthotics because they experience neuropathy (decreased sensation) associated with the disease. These orthotics decrease the chance of sores and infections, which are a common diabetes complication and can lead to amputation.

PROSTHETICS

UPPER LIMB PROSTHETICS

Upper limb prosthetics, another form of AT, are available in various styles and are generally separated into four subgroups: (1) cosmetic, (2) body-powered, (3) myoelectric, and (4) hybrid (a combination of body-powered and myoelectric). The prosthesis that is prescribed to the Soldier depends on several factors including the level of his or her amputation, the condition of the residual limb, capability to control it, functional level needed, comfort, and preference.

COSMETIC PROSTHETICS

Active amputees rarely use cosmetic prosthetics. These devices, which have little or no functional actions, are sometimes called passive devices when a stabilizing or carrying function is built in. They also do not provide grasping ability and have little control. Cosmetic considerations are addressed when deciding which type of prosthetic to use, but usually they are the last topic addressed. The cosmetic aspect is important to some Soldiers with amputations, but should not be the main goal of the prosthetic. The main goal should be the functional characteristics of the device.

BODY-POWERED PROSTHETICS

Movements of the shoulder, arm, and chest control body-powered prosthetics (Figure 8-8). The prosthetic is linked to these movements and controlled by cables that connect to a specially fit harness system. Because of the involvement of cables, it is sometimes referred to as a cable-driven prosthetic. The cable controls the terminal device of the prosthetic, which can be an artificial hand, hook device, or one of many activity-specific devices. For the Soldier with an amputation to control this type of prosthetic, he or she must be capable of performing certain movements and have adequate muscle strength to perform a wide range of motions.^{29,30}

The simple design of the body-powered prosthetic (no motors or electronic componentry) makes it very durable and a good choice for users who engage in activities in which the weather and the environmental setting can cause damage to more technically controlled systems. The simplicity of the device makes it lightweight and less expensive than electrically controlled prostheses and, therefore, it is a sound choice for most users.

MYOELECTRIC PROSTHETICS

Myoelectric prosthetics (Figure 8-9) are controlled by the contraction of muscles in the residual limb (stump) or surrounding muscles. Tiny electrodes



FIGURE 8-8. *Upper extremity body-powered prosthetic.*

are positioned in the prosthetic socket and record certain muscle contractions. These recorded movements are then sent to the small motors in the device, and the signals cause the motors to perform a specific operation. The strength of the operation is determined by the strength of the muscle force exerted. If the muscle force is high, then the speed and grip force reflect it.³⁰ A great benefit to this type of system is that the myoelectric-powered prosthetic provides a strong grasping force and wrist rotation without damaging the muscles and tissue in the arm. This rotation also helps with fatigue because the Soldier does not have to exert extra energy to strongly grip objects with the hook or other terminal device.

The health of the residual limb is an important consideration when deciding to use a myoelectric prosthetic. After an amputation, nerve damage, muscle atrophy, and scar tissue may occur at the site of the electrodes, which make operating the prosthetic more difficult. This prosthetic is more complex than a body-powered device and requires battery maintenance and complex repairs. Because of the extra componentry, the myoelectric arm is heavier and



FIGURE 8-9. *Myoelectric prosthetic.*

can be damaged by moisture and excessive activities.^{29,30}

LOWER LIMB PROSTHETICS

Lower limb amputation is the most common type of amputation.³¹ The treatment of lower limb amputees varies significantly. Many different components, materials, and techniques create a prosthetic system that provides the highest possible level of function. The factors for designing and constructing a prosthetic include level of amputation, strength and endurance, comorbid conditions, condition of the residual limb (stump), activity level, and

preference of the amputee. The basic components of a lower limb prosthetic include the socket, suspension system, pylon, any joints necessary, and foot.

The two most common types of lower limb amputation are (1) the transfemoral amputation (also known as above-knee amputations), and (2) the transtibial amputation (also known as below-knee amputations). Hip and knee disarticulations are also seen frequently among lower limb amputees. The main difference among prosthetic systems is the number of joints that are being replaced. For example, a Soldier with an amputation through his or her hip (hip disarticulation) requires a socket with some type of suspension system, a hip joint, a pylon from the hip joint to the knee joint, a knee joint, a pylon from the knee joint to the foot, and a foot; however, a Soldier with a below-knee amputation only requires a socket with some type of suspension, a pylon from the socket to the foot, and a foot.

SOCKETS

The prosthetic socket is considered the most important component of the prosthesis. As the interface between the body and the prosthetic, the socket should be designed properly to achieve satisfactory load transmission, stability, and efficient control for mobility in a comfortable manner.³¹ When an amputee takes a step, the muscles of the residual limb contract to create a closed-kinetic chain environment within the socket for stability and then continue to contract to maintain prosthetic control during functional

movements such as walking and running. If the socket is not properly fit to the Soldier, then he or she has difficulty controlling the prosthetic.

Another important consideration in socket design is the understanding that the skin and underlying soft tissue of the residual limb are not designed to sustain the range of pressure variations and repetitive forces encountered during prosthetic usage. Through the years, socket design has progressed to provide the most effective transfer of forces from the prosthesis through the residual limb to support prolonged activity without damaging soft tissue or skin, or producing discomfort.³¹

LINERS AND SUSPENSION

Some of the most significant developments in recent years have occurred with the interface between the residual limb and the socket. The two most common interface systems are (1) liners, and (2) suspension sleeves. The liner (Figure 8-10), which is designed to provide padding or cushioning for the residual limb, is available in a prefabricated form or custom manufactured. Numerous materials are available such as closed-cell foam, urethanes, silicone elastomers, silicone gels, and many combinations of materials. The materials are chosen based on the desired properties needed for the individual.

Suspension of the prosthesis can be achieved in many ways depending on the length and condition of the residual limb and preference of the Soldier with a major limb amputation. In the past, belts, corsets, and lanyard systems were commonly used, but they are less common now. Mechanical locks can be incorporated into the socket for use with a gel liner and a pin that extends from the bottom of the liner. In this pin-lock system, the gel liner is rolled onto the residual limb and then the pin is engaged into the lock.

Properties of suspension sleeves and liners are commonly combined to create a suspension liner, an interface system that provides both suspension and padding. Suction suspension systems also use a gel liner, but without the pin. A one-way valve removes air from inside the socket and allows a tight vacuum to be formed with an airtight outer sleeve. If the airtight seal



FIGURE 8-10. *Liner.*

is broken, the suspension system will fail and cause movement between the limb and prosthesis. Sealing liner suspension is similar to the suction system. The benefit of this system is that the outer sleeve is not needed, which allows the knee to move more freely. A hypobaric seal is created below a ring built into the gel liner. A one-way valve is also used to create an airtight environment. A push button release is used to let air back into the socket, break the seal, and remove the prosthesis. Vacuum systems use a pump, which creates a vacuum within the socket. The increased negative pressure may create a tighter fit by “pulling” the tissue into the socket while improving circulation and nutrition to the tissues, facilitating improved health of the residual limb.³¹

KNEES

Several types of prosthetic knees are available that have different basic functions, advantages, and disadvantages, including the following:

- single axis,
- stance control,
- polycentric,
- manual locking,
- hydraulic,
- pneumatic,
- hybrid, and
- microprocessor knees.

Single axis knees are very simple, inexpensive, and durable. The single axis knee, which is controlled by the Soldier, requires a fairly consistent rate of walking. Single axis knees are becoming rare because more functional and technologically advanced options are available.

The stance control knee improves knee stability and incorporates a locking mechanism that brakes or slows down the freedom of motion when weight is placed on the prosthesis. To unlock and swing the leg forward, the amputee needs to shift all of his or her weight to the other side, and the mechanism will unlock to allow the leg to swing forward freely.

The polycentric knee represents the anatomical knee better than the single axis knee and the stance control knee. This knee offers advantages with rotation and more closely mimics the human knee with gliding and rolling mechanisms by the use of linkage bars. This knee, which is prescribed more than the single axis knee, provides a more normal looking walking pattern. The increased weight, cost, and maintenance are overshadowed by the increased function of the component.



FIGURE 8-11. *Microprocessor knee.*

The manual locking knee locks into full extension, causing maximum knee stability. However, this then causes the individual to compensate while walking in some way that leads to unnatural-looking movement and causes the amputee to use more energy during mobility.

The hydraulic knee changes the rate that fluid is moved through the cylinder and can be adjusted using screws. This controls the rate of movement and provides the proper resistance.

Air, which is easy to compress, makes the pneumatic knee have a spring type feeling, and the device can be adjusted to actually help propel the prosthesis forward.

Microprocessor knees (Figure 8-11) are becoming popular among Soldiers with amputations requiring a knee joint. These knees have the unique ability to control resistance and make adjustments almost instantly inside the knee. Microprocessor knees use sensors to continuously monitor knee position, time, velocity, forces, and movements during walking. The microprocessor then calculates comparisons between steps and adjusts the resistance to control the mechanical knee. Microprocessor knees work on the same principles and are different only in the medium used for cadence control and microprocessor speeds. As the amputee rolls over the prosthetic foot, the microprocessor senses that the limb is moving into swing and adjusts the resistance to allow him or her to walk faster or slower.³¹ The newly developed Power Knee (Ossur Americas, Foothill Ranch, CA) uses Bluetooth technology sensors to accurately signal where the leg is positioned. By using small motors, these knees attempt to replace lost muscle function used to propel the leg forward and make it possible to climb stairs, walk down inclines, and walk farther distances by using the motorized knee control.^{29,30}

FEET

Feet, which are extremely important components when designing the prosthetic system, are classified by the special function and features that they bring to the prosthesis. The most common feet classes are the following:

- single axis,
- solid ankle cushion heel (SACH),
- multi-axial,
- flexible keel, and
- dynamic-response.³⁰

A single axis foot is larger and heavier than the other types, and is usually only used in cases of limited mobility.

The SACH, which is lighter weight, more durable, and virtually maintenance free, is a simply designed foot that transitions smoothly and is used primarily when extra knee stability is needed.



FIGURE 8-12. *Dynamic-response prosthetic foot.*

The multi-axial ankle-foot is basically designed to accommodate the amputee when moving over uneven terrain. This component can adjust so that the foot is flat when moving over uneven ground such as grass, crosswalks, and other irregularities.

The flexible keel foot, which is almost completely made of rubber, allows the foot to bend more easily and creates easier walking for amputees.

The most common type of feet for active amputees is the dynamic-response foot (Figure 8-12). Many different variations of this foot exist, but all include some sort of shock absorption. Dynamic-response feet are usually of the energy storing and return design.³⁰ This foot has a spring type of heel that absorbs and stores energy and then returns the energy at the end of the step. Dynamic-response feet, which are the most energy-efficient option for high performance and sporting activities, help amputees transition to a higher level of activity.²⁹ Depending on the activity, prosthetic feet have many features such as components that assist with shock absorption and permit rotation.

ADAPTIVE SPORTS

Soldiers with physical or mental limitations play adaptive sports. Many of these adaptive sports are based on existing sports but modified to meet the needs of Soldiers with disabilities. However, not all disabled sports need to be

adapted, and several sports have been specifically created for individuals with a disability and have no equivalent in able-bodied sports. Sports for individuals with disabilities are commonly traced back to Sir Ludwig Guttmann of the Stoke Mandeville Hospital in England.³² In 1948, while the Olympic Games were being held in London, he organized a sports competition for wheelchair athletes at Stoke Mandeville. This was the origin of the Stoke Mandeville Games, which evolved into the modern Paralympic Games.³²

Recreation and sports are cornerstones of how human beings define themselves, and the competitive spirit is just as prominent in Soldiers with disabilities as it is in their able-bodied counterparts. Athletes with disabilities, like able-bodied athletes, often engage in endurance, skill, speed, and periodization training. When faced with a disability, many Soldiers experience decreased confidence and self-esteem, as well as feelings of depression or hopelessness. Sports and recreation offer the opportunity to acquire new skills, build friendships, and experience success, leading to improvements in overall quality of life. By experiencing victory and defeat, these Soldiers build strategies for life and begin to feel more alive, and they see challenges as things to overcome instead of obstacles blocking their path.

ADAPTATION AND EQUIPMENT

Adaptation can be considered any way a Soldier with a disability overcomes some limitation whether by training or equipment. In some cases, learned compensations or properly executed training can overcome limitations; other times specialized equipment is required. When considering participation in an adapted sport, it is important to consider equipment choices that maximize a Soldier's abilities while minimizing disability. In addition, understanding appropriate training techniques specific to the sport or activity is vital to successful performance. Specialized equipment is often developed to augment athletes' performance in adapted athletics. In addition to applying the latest materials and technologies, customized equipment such as sports wheelchairs must fit and match an athlete's goals, skills, and abilities so that the equipment is essentially an extension of the user's body. For this reason, sports equipment tends to be highly customized because individual differences in body structure and physical ability affect the extent to which efficiency and mechanical advantage can be achieved. Furthermore, failure to fit sports equipment appropriately to the individual may result in impaired performance and can increase the risk of injury.

Adaptive equipment is designed to help individuals with various disabilities to participate in the sport or recreational pursuit of their choosing. This equipment ranges from very expensive and technologically advanced to low technology and inexpensive. For example, a Soldier with limited

use of one arm who wants to go kayaking may strap his or her hand to the paddle with rubber tubing for better control. This adaptation is low tech and inexpensive, but effective.

The most advanced equipment is not always the best choice. Equipment should be selected based on the level of impairment, goal of the activity, and user preference. If possible, an evaluation should take place with the Soldier, a therapist, and an experienced coach—at minimum—for the user to get the full advantage of the equipment. Initially, it is suggested that Soldiers try several different activities before investing in one sport. Throughout this period, the Soldier should try as many different pieces of adaptive equipment (depending on the sport) as possible to see what works best. A comprehensive description of adaptive equipment for all sports and disabilities is beyond the scope of this chapter, but a few common examples will be presented.

Sport-specific Prosthetic Components



FIGURE 8-13. *Upper extremity weightlifting prosthesis.*

including weightlifting (Figure 8-13), basketball, golf, baseball, swimming, rock climbing, and biking.

Soldiers with lower limb amputations can be seen using prosthetics designed for running, rock climbing, biking, skiing, swimming, and even boxing. Only a few sport-specific prosthetic feet are commercially available seen mainly for long-distance running and sprinting (Figure 8-14); the majority of sports do not require a specialized prosthesis. A well-fitting everyday prosthesis that offers either dynamic-response or the required mobility will allow participation in most sports with few limitations.³¹

Many prosthetics have been designed that are sport-specific and developed with a combination of specialized sockets, terminal devices, joints, feet, and accessory components such as shock absorbers, materials that allow rotation, and torsion adaptors. Many terminal devices have been developed for upper limb amputees designed to replace the typical hand or hook and assist with participation in various sports. Specific devices are made for certain activities



FIGURE 8-14. *Cheetah* (Ossur Americas, Foothill Ranch, CA).

Wheelchair Sports

Wheelchair athletes are unique because they must use their upper extremities for both locomotion and skill performance such as ball handling. Appropriate wheelchair selection and fitting optimize performance and protect against injuries. Equipment for wheelchair sports can also be highly customized depending on the demands of the sport. For example, quad rugby chairs (Figure 8-15) need to be agile enough to accelerate and decelerate quickly, but also stable and durable to take crushing hits from other players, which makes them heavy.



FIGURE 8-15. *Sports (rugby) chair.*

In contrast, a racing wheelchair is built for speed, resulting in a lighter, less stable, but faster chair. Common wheelchair sports include basketball (manual wheelchair), tennis, quad rugby, track and field, handcycling (power wheelchair), and power soccer.

Adaptive sports and recreation should be a fundamental part of any multidisciplinary rehabilitation program. Many programs are available internationally to ensure participation does not end after rehabilitation is completed. The inherent pull of sports is that any sport can be adapted for participation by potential athletes depending on desire and imagination, with benefits of participation reaching far beyond the practice field.

ASSISTANCE DOGS

Another way to assist Soldiers with some type of physical or mental impairment is through the use of trained assistance dogs. Typically, Labrador Retrievers, Golden Retrievers, and German Shepherds are trained to help Soldiers because of their intelligence, temperament, and size. However, the type and size of the dog vary depending on the job the dog needs to do. For example, a hearing dog may need to be small enough to get up on a bed and on the chest of the Soldier who is deaf to alert him or her to the ringing of the alarm clock. However, a dog assisting with balance may need to be larger to counterbalance the Soldier's weight.

Assistance dogs provide many benefits to their Soldiers, including constant companionship, a reason to get out of bed every morning, and a conversation starter between their partners and passers-by. Researchers have also found that assistance dog partners have reported that they are more independent, feel safer, and can leave their homes more often.^{33–36} Depending on the type of assistance the dog provides, it may be categorized into one of the following groups.

LEADER DOGS FOR THE BLIND/GUIDE DOGS FOR THE BLIND

Guide dogs are trained to help Soldiers who are blind or have limited vision, such as those who are legally blind.³⁷ This type of assistance dog is the oldest group of dogs trained to help humans.^{38,39} The need for guide dogs became evident after World War I when Soldiers who had lost their vision returned from the war.

HEARING DOGS

Hearing dogs are specifically trained to alert Soldiers who are deaf or have limited hearing to sounds of daily life, such as the doorbell, a baby's cry, or the smoke detector.⁴⁰ However, these dogs must also be trained in basic obedience and must respond to voice or hand signals.⁴¹ Furthermore, all dogs must be able to alert their partners to a minimum of three sounds. Hearing dogs are typically smaller than other types of assistance dogs. Hearing dogs were first trained and used in the late 1970s.³⁸

SERVICE DOGS

Service dogs are specifically trained to assist Soldiers who use manual or power wheelchairs to complete their daily tasks, such as dressing, shopping, navigating outside environments, and retrieving dropped items. According to Fairman and Huebner in their 2000 study of 202 service dog partners from 40 states and Canada, service dogs were trained to assist their partners in 28 functional tasks, including retrieving dropped items, getting around in the community, shopping, navigating the home environment, and communicating.³³ Furthermore, these service dogs were found to help their Soldiers feel safer, more independent, more confident, and in control. Fairman and Huebner also report that reliance on human assistance declined an average of 2 hours per week per study participant.³³

SEIZURE DOGS

Assistance dogs trained to protect their Soldier while he or she has a seizure are a fairly new type of assistance dog. These seizure dogs can warn their partners up to 20 minutes before the start of a seizure, according to a case

study of six participants by Strong, Brown, and Walker.⁴² According to Dalziel et al, a trained seizure dog is more likely to alert a Soldier who has complex partial seizures or migraines, or experiences auras of unusual feelings in his or her head, dizziness, nausea, lip smacking/mouth movements, and breathing changes.³⁹ The authors note that the seizure dogs' alerting behavior is not dependent on the breed, gender, or age of the dog, and their effectiveness relies on the Soldier's ability to recognize when the dog is alerting him or her.

DIABETES ALERT DOGS

Diabetes alert dogs are specially trained to alert their owners with Type I diabetes well in advance of an impending hypoglycemic attack. If left untreated, a hypoglycemic attack for a Soldier with diabetes can lead to coma or even death.⁴³ This specialty of assistance dogs began in 2003, when a dog named Armstrong was obtained from Guide Dogs for the Blind and his scent and alert training began.⁴⁴

MANUAL WHEELCHAIR SELECTION AND CONFIGURATION

For many Soldiers having sustained injury or living with disability, wheelchairs effectively provide mobility and enable full life participation. A wheelchair should be designed and selected to promote a Soldier's individual goals and abilities and maximize comfort while minimizing the development of further disability or injury. Numerous personal and equipment factors must be considered when optimizing the match between Soldier and wheelchair.

Wheelchairs can be constructed from various materials such as steel, aluminum, titanium, and even carbon fiber. In addition, chairs can offer more or less adjustability depending on type. A majority of manual wheelchair manufacturers offer highly adjustable chairs that are low in weight (< 25 lb) and hold up to heavy use. Defined by Medicare, some lightweight wheelchairs (coded K0004) offer rear axle adjustability; however, all ultra lightweight (K005) chairs are adjustable. Active long-term wheelchair users should therefore seek out ultra lightweight wheelchairs.

A new user should start with a chair that is more adjustable because it can take years to find an ideal setup. Drawbacks to highly adjustable wheelchairs are increased weight and more moving parts that can potentially break down or loosen. Eventually, experienced users who are confident in their setup will opt for a ridged, less adjustable chair to minimize overall weight and maximize the frame strength and rigidity. Although a wheelchair must serve many purposes such as dressing, transferring, and postural control,



FIGURE 8-16. *Wheelchair configuration.*

mobility can be viewed as its primary function. Ease of mobility is important not only for independence but also for minimizing the development of upper extremity repetitive strain injury, which is common to manual wheelchair users.⁴⁵⁻⁴⁷

Many factors are involved in what makes a wheelchair more or less efficient to propel; the right setup can also help to prevent pain and injury. Rolling resistance is—in a sense—the greatest enemy to a wheelchair user because it places increased demands

on the arms for propulsion and can elevate the likelihood of developing pain and injury.⁴⁸ Fortunately, rolling resistance can be minimized through several strategies, such as maintaining ideal body weight, selecting the right equipment, and configuring a wheelchair chair properly. A wheelchair user should be encouraged to maintain an ideal body weight and should obtain the lightest frame materials when possible. Although a heavier setup, which includes the person and chair, requires more force to propel, and proper configuration can help to decrease high rolling resistance.

Wheelchair handling, overall performance, and propulsion technique can be improved considerably within minutes if one has the proper knowledge of setup and configuration. Rear axle position can dramatically improve or diminish any manual wheelchair's performance. The rear axle position should be placed forward and higher relative to the shoulder. In essence, a person should sit deep, with the wheels right under or slightly in front of the shoulders. In doing so, a greater proportion of an individual's body weight is focused over the rear wheels rather than the smaller front castor wheels. In addition, this placement helps the Soldier to reach the handrim, thus promoting longer and smoother strokes.⁴⁹ Ultimately, the Soldier can take longer strokes, propelling less frequently, to achieve a desired speed, which is ideal for injury prevention over long-term use. In addition, the rate at which a Soldier experiences total force through the arms and shoulders can be reduced because force is applied over a greater distance per stroke.⁵⁰

It is generally recommended that wheelchair users position the axle as far forward as they feel comfortable. Typically, as wheelchair users become more experienced, they tend to use chairs in which it is easier to “pop wheelies.” However, new users should start conservatively and move the axle forward over time with the guidance of a clinician. Seat height is another important component of configuration. One study found optimal seat height to be at a position in which the elbow is flexed from 100 degrees to 120 degrees, with the hand on top dead center of the pushrim, as shown in Figure 8-16.^{50,51}

Although determining ideal configuration is highly personal to each user, configuration recommendations have been supported by research. Even the lightest and strongest wheelchair made from the most exotic materials can be rendered useless if improperly configured, much the same as a prosthetic limb.

ADAPTIVE EQUIPMENT FOR ACTIVITIES OF DAILY LIVING AND COGNITIVE ASSISTIVE TECHNOLOGY

DAILY LIVING AIDS

AT or adaptive equipment (AE) refers to any device, tool, or product that helps a Soldier with a disability perform tasks and activities that would otherwise not be possible, or which could only be done with greater difficulty. These tasks include activities of daily living (ADLs) and IADLs. ADLs are activities usually performed in the course of a day related to self-care, such as eating, toileting, dressing, bathing, or brushing the teeth. IADLs are described as activities often performed by a Soldier who lives independently in a community setting in the course of a day. Examples of IADLs include managing money, shopping, using the telephone, traveling in the community, housekeeping, preparing meals, and taking medications correctly.⁵²

AT/AE can be categorized in several ways. As in rehabilitation, some strategies use an augmentative/enhancement approach. The Soldier’s ability to perform the task is improved through using AT. However, an alternative/compensatory approach either changes the way a Soldier performs a task, or changes the task itself to make it easier to complete. Another way AT/AE can be classified is as a general versus task-specific solution, ie, devices can be specific to one task or used for multiple tasks.⁵³ The most common way to categorize AT/AE is by the use or purpose of the device for completion of everyday tasks. AT/AE does not need to be high tech. Even something as simple as a cane, for example, is considered AT insofar as it aids the Soldier to maintain his or her balance and walk. At the opposite end of the spectrum, more high-tech adaptive devices exist. The scope of this book does not provide a comprehensive description or listing; however, a brief

overview of AT devices for use in completion of ADLs and IADLs is included below.

General purpose aids serve more than one need in task completion. Common examples include mouth sticks, head pointers, and reachers. Reachers are versatile devices that use

both a compensatory and enhancement approach. Two types of reachers are pictured in Figure 8-17. Reachers are effective in helping Soldiers to accomplish a task in the following four ways:



FIGURE 8-17. *Reachers.*



FIGURE 8-18. *Key holder.*

1. lengthening a handle or reducing reach,
2. modifying a handle of a utensil for easier grasping or manipulation,
3. converting two-handed tasks to one-handed tasks, and
4. amplifying the force that a Soldier can generate with his or her hand.

Conversely, key holders (Figure 8-18), with various options for grip patterns, are considered a task-specific solution.

CLOTHING AND DRESSING AIDS

Adaptive clothing and dressing aids can help Soldiers with limited range of motion, trunk instability, or use of only one arm to balance convenience and appearance. Long-handled devices (eg, dressing stick, long shoe horn, and long-handled brushes and combs) make reaching easier when pain and limited range of motion and function interfere with completing these self-care tasks. The sock aid (Figure 8-19) and the foot funnel (Figure 8-20) are extremely useful devices for Soldiers with limited ability to bend at the waist or knees. For the sock aid, the user puts a sock over a thin piece of plastic or cloth designed to hold the sock open, slips the sock on the foot, and pulls the sock on with two pull-tabs or handles. Elastic shoelaces, button-hook/zipper pulls (Figure 8-21), and Velcro (Velcro USA Inc, Manchester, NH) fasteners are also helpful to Soldiers with limited fine-motor dexterity. Fine-motor skills are the coordination of small muscle movements (ie, in the fingers) that occur usually in coordination with the eyes. In application to motor skills of hands, the term dexterity is commonly used. Soldiers with many different conditions



FIGURE 8-19.

[Top left] *Sock aid.*

FIGURE 8-20.

[Bottom left] *Foot funnel.*

FIGURE 8-21.

[Top right] *Zipper pulls.*

often struggle with limited fine-motor dexterity because of problems with motor planning (apraxia), tremors, pain, etc.

TOILETING, BATHING, AND TRANSFERRING AIDS

Bathing and transferring activities require mobility, energy, and adherence to safety precautions, which can be impaired in Soldiers with various disabling conditions. AT and bathroom modifications can improve function and increase the safety of the Soldier and caregiver during toileting, bathing, and transferring. Commonly utilized AE includes transfer benches, tub trolley, and power lifts. The power lift toilet seat is one example of AT that can improve a Soldier's independence for sit-to-stand transfers. Hygiene tasks and activities can be assisted by adaptations to devices or specialized equipment such as long-handled brushes and sponges or holders for electric or manual razors.

EATING AND COOKING AIDS

A large variety of dinnerware and utensils can increase independence in self-feeding. These products can assist Soldiers to help themselves with or without supervision or assistance. Most of the dinnerware and utensils are designed to allow the Soldier to compensate for a functional skill that he or

she has difficulty performing or can no longer do. Low-tech examples of self-feeding aids include universal cuffs, bent or swivel handles, and suction cup bottoms for bowls. Self-feeders can enable Soldiers without the use of their arms to feed themselves from a plate or bowl at their own speed. The Soldier operates the feeding mechanism by moving his or her head on a chin switch that activates a motorized pusher that fills the spoon and moves it to the mouth. Controlled rotation turns the plate for specific food selection for each spoonful. When the bowl is used, the dinner plate and pusher are removed, and the turntable, shelf, and drip pan are added. The height of the feeder can be adjusted to meet the person's needs.

COGNITIVE AIDS

It is estimated that more than 21 million persons living in the United States have a cognitive disability of some form and extent. As the population ages, this number is expected to increase significantly.⁵⁴ A Soldier with a cognitive disability is defined as one who is “significantly limited” in at least two of the following areas:

- self-care,
- communication,
- home living,
- social/interpersonal skills,
- self-direction,
- use of community resources,
- functional academic skills,
- work,
- leisure,
- health, and
- safety.⁵⁵

The most frequently treated conditions in the VA healthcare systems for cognitive disability are either neurobiological (eg, schizophrenia, Alzheimer's disease) or acquired (eg, cerebrovascular accident, commonly referred to as a “stroke”; traumatic brain injury). Traumatic brain injury has been described as the “signature injury” of Operation Iraqi Freedom/Operation Enduring Freedom. Even in the absence of direct blast impact, external injuries, or loss of consciousness, blast waves can result in injury to brain tissue.⁵⁶ Cognitive disabilities affect the abilities to function independently, such as generalizing from one situation to another, learning new things, or communicating through written or spoken languages.⁵⁷ More specifically, executive function deficits including memory (short-term and long-term), initiation, problem solving, and decision making can lead to barriers in completing daily

activities at work, home, or within the community.⁵⁸ AT can help Soldiers to compensate for these deficits. Commonly recommended memory aids include jumbo analog wall clocks, daily calendars, talking wristwatches, voice-activated phone dialers, automated medication dispensers with a message machine and timer, and beeping devices to keep track of items (eg, car keys, glasses). A wristwatch is useful for Soldiers who only need reminder alarms to help them stay on task during the day. Color-coding and symbols to label locations of materials in cabinets and drawers are helpful to many Soldiers with cognitive deficits. Likewise, warning signs on potentially dangerous materials, substances, and appliances can help maintain safety.⁵⁹

Smart phones, personal digital assistants, and other specialized electronic devices can be loaded with software to provide cognitive supports. Digital scheduling assistants provide a simplified reminder prompting system that can include auditory and picture cues to help a person stay on task during the day. Individuals with cognitive impairment sometimes can get lost even near their homes. Personal digital assistants and/or smart phones with route-mapping software and audio-visual prompts (global positioning systems) are useful to individuals with difficulties finding their way.⁶⁰ When programmed with familiar routes, these devices can help Soldiers get to work, the grocery store, other sites, and back home again without getting lost.

REHABILITATION ROBOTICS

Further advances in medical care may result in more Soldiers surviving previously fatal injuries and conditions. However, a shortage of personal care attendants is anticipated in both the near and long-term future. To meet this growing need, rehabilitation engineers and clinicians are partnering with computer and robotics engineers to create more sophisticated or “smarter” devices to assist Soldiers with physical and mental impairments that result from disability. These devices can be mobile or immobile, provide services, or perform rehabilitation.

Mobile robotic devices such as robotic vacuum cleaners or wet floor vacuums have been readily accepted into the American household. Some cars can autonomously parallel park, something that still challenges many human drivers. The human environmental robotic butler can—for example—place dirty dishes safely into a dishwasher or reach for items on upper or lower shelves for someone seated in a wheelchair. Nonmobile service robotic devices include AT that permit a Soldier without arm or hand function to independently feed him or herself.

Robotic devices are also being integrated into rehabilitation. Continuous passive motion machines can provide hours of passive range-of-motion therapy to Soldiers following joint replacement surgeries, which no clinician

could physically provide. Robotic walking-assist treadmills help Soldiers with hemiplegia, paraplegia, or quadriplegia to bear weight on their lower extremities while moving through a near normal walking gait pattern by replacing the actions of therapists or clinicians who would manually move each individual leg, the pelvis, and the trunk. This extremely tiring and difficult task is coordinated and completed robotically, allowing for a smoother and more efficient gait that can be extended to provide a very thorough experience. Robotic arms have been used to diagnose faint hand tremors associated with Parkinson's disease at a subclinical level. In other words, individuals may be screened using directional robotic arm assessments. These arms are so sensitive that they help researchers diagnose Soldiers with Parkinson's disease before any other clinic indicators are observed.⁶¹

Another rehabilitation device is a "cognitive coach" to help Soldiers with cognitive impairments to complete a daily task by reminding them of the steps involved and the order in which they need to be executed. A cognitive coach can also remind a Soldier to take his or her medications by a specified time, or alert someone else if he or she tries to wander from home. Several technologies are being developed to support cognitive coaching, such as indirect sensing and inside-out vision. Indirect sensing will replace direct videotaping through a system of sensors placed on objects that indirectly record the movements and activity of a person in a particular place and time. These sensors may be placed in a bedside mat, on toilet plumbing, or under the stovetop to determine whether a Soldier has arisen in the morning, used the commode, or made a pot of tea. Combined with programming and fuzzy logic, the resulting cognitive coach may run independently in the background and only make itself known at a Soldier's request or when it senses a need to intervene.

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GEOFF HOPKINS GREW UP PLAYING Little League baseball, Catholic Youth football, and running track in Maumee, Ohio. His biggest accomplishment as a child was being the “fastest kid” in Maumee. He won many trophies and ribbons running track

events such as the 50- and 100-yard dashes. He attended Maumee High School, where he juggled work, football, and soccer. The US Army became Hopkins’ life for the next 4 years. He worked as a communications specialist in Augusta, Georgia, and Augsburg, Germany. While serving in the Army, he went to college part-time. In September 1988, Hopkins had recently been discharged from the US Army and was anticipating attending Marshall University in Huntington, West Virginia, full-time. His thoughts were full of his prospective future when he rode his motorcycle home from a night out with friends. He had ridden motorcycles most of his life, but this ride was his last for some time. Although the police never determined why he had lost control of his motorcycle, he knew that he would never walk again.

Even though the accident left Hopkins with a different mode of getting around in life, it did not break his spirit. He still believed in pushing forward and living life to its fullest. He breezed through his rehabilitation program and pushed himself to begin college that January. He completed a bachelor of arts degree in criminal justice and master’s of education degree in therapeutic recreation.

In July 1989, Hopkins attended the National Veterans Wheelchair Games in Long Beach, California. He was amazed by the number of sporting activities in which he could participate. He participated in the 800-meter dash in an old E&J Ultralight, while most others were in compact three-wheeled racing chairs. Two months later, his mother purchased his first racing wheelchair and he pursued the racing circuit. During his college years, he trained hard and raced the Columbus Marathon, Detroit Marathon, Boston Marathon, Richmond Marathon, The Crim 10-miler, Old Kent River Bank Run 25K,

Toledo Blade 10K, Cleveland-Revco 10K, Allen Park 8K, Northville 8K, Treadmill 8K, and many other races in Ohio, Michigan, and West Virginia. Of all his racing wheelchair wins, his greatest accomplishment was winning the Richmond Marathon in 1994 and then competing in the Boston Marathon. He won the Richmond Marathon, Allen Park 8K, Northville 8K, and Treadmill 8K; and he placed 2nd in the Toledo Blade 10K, 11th in the Columbus Marathon, and 57th in the Boston.

After graduation, Hopkins accepted a position at the Paralyzed Veterans of America in Washington, DC, and now works in the sports and recreation program as an associate director. Since leaving college and relocating to Washington, DC, he competed in the Sallie Mae 10K, Colt-USO Defender's 10-miler, Cherry Blossom 10-miler, Fair Lakes 8K, Race for the Cure 5K, Rockville Rotary 8K, GW Parkway Classic 15K, Shamrock Half-marathon, Marine Corps Marathon, and the MS 10-miler. Hopkins won the Cherry Blossom 10-miler, Sallie Mae 10K, Fair Lakes 8K, GW Parkway Classic 15K, and the MS 10-miler.

Hopkins has placed training hard as a top priority and frequently races in marathons and cycling races in the DC area and up and down the East coast. Over the past 10 years he competed in the National Veterans Wheelchair Games, Baltimore Marathon, Marine Corps Marathon, New York City Marathon, Cleveland Marathon, Fifth-Third River Bank Run, and many cycling races. His greatest accomplishment in handcycling recently occurred when he finished in 1:21:47, breaking his previous personal record by more than 11 minutes.

Besides handcycling and wheelchair racing, Hopkins enjoys participating in other recreational activities such as off-road wheelchair riding, skydiving, swimming, snow and water skiing, camping, hiking, and weight training. His skydiving adventures have included tandem jumping outside of Houston, Texas, and Coal Grove, Ohio. He has been very fortunate to snow ski at Breckenridge, Colorado; Boston Mills/Brandywine in Cleveland, Ohio; and Whitetail in Mercersburg, Pennsylvania.

Racing and staying active are an integral part of Hopkins' life. He is married and has a 2-year-old son.

*The willingness with which our young people
are likely to serve in any war, no matter how justified,
shall be directly proportional as to how they perceive
the Veterans of earlier wars were treated and
appreciated by their country.*



GEORGE WASHINGTON

CHAPTER NINE

Resilience to Adapt and Overcome

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INTRODUCTION

In late November 2005 improvised explosive devices (IEDs) in Habbaniyah, Iraq, impacted a convoy of four up-armored Humvees. Two IEDs were detonated simultaneously against the second vehicle traveling on an elevated canal road. The first IED disabled the vehicle and the second IED ripped open the fuel tank. Diesel fuel sprayed over all five occupants of the vehicle and immediately ignited. Even as the vehicle was engulfed in flames, the personnel sitting next to the doors managed to extricate themselves and roll down the hill into the stale drainage water to extinguish the flames. The turret gunner, however, was unable to extricate himself from the vehicle.

Personnel on the scene were unable to rescue him because the ammunition in their vehicle was “cooking off” and the patrol was taking small arms fire. Consequently, the gunner died. The remaining four members of his crew all had third-degree burns over at least 80% of their bodies. After they were stabilized, the four warriors were transferred to the Army’s burn unit at Brooke Army Medical Center. Once the Soldiers were in Texas, their Families and the dedicated staff at Brooke Army Medical Center attended to the Soldiers’ medical, physical, psychological, emotional, physical, and spiritual welfare. One spouse quit her job and moved to San Antonio. She wanted to be by her husband’s side every day. She wanted to help feed him and help him to exercise. She accompanied him to his appointments, read to him, and advocated for him. She managed his schedule and appointments. She made plans with him and did everything humanly possible to enable him to beat the odds that were stacked against him, but tragically, after the other three survivors ultimately succumbed to their injuries, he too died.

The warrior was laid to rest among his fellow Soldiers at Arlington National Cemetery. His wife was there, as were buddies from around the country. When the official ceremonies and honors concluded, his wife asked all those in attendance to gather around her. She thanked everyone for their love and support. She told them how much they all meant to her husband, of how proud he was to serve with them, and how much he loved them and his country.

None of this was surprising. The Soldier was the quintessential professional. But what some in the gathered crowd did not know is that this widow—dressed in black—was a Soldier herself. She had been to Iraq the year before her husband. She too had been in a convoy that was attacked by an IED. Her vehicle flipped over and was destroyed. She was knocked unconscious. When she regained consciousness and crawled out of the vehicle, she was shot. When the medical team at the forward surgical hospital evaluated her, they discovered her neck was broken. She had to be placed into a HALO, a metal frame around her head with pins screwed into her skull so her cervical spine would have time to heal. She could have asked her husband not to deploy. She could have begged him to stay and help her because she was going to have to wear that HALO for a year, but she did not. She helped him pack his gear, and when he came back to the states for his medical care, she rushed to his side . . . still wearing the HALO. She is a remarkable person. She is mentally tough and spiritually strong. She is a resilient Soldier and citizen who inspires all who know her.

PURPOSE AND DEFINITION

The purpose of this chapter is to assist leaders in Warrior Transition Units (WTUs) to think intentionally about resilience and specifically assist the Warrior Transition Leaders (WTLs) to address and develop resiliency within their command. The US Army—in fact all branches of the US military—carefully study resiliency. Many definitions of resiliency exist. Waller defined resilience as a positive adaptation in response to adversity, which is generally subdivided into challenging life circumstances and trauma.¹ Some people see it simply as being tough and picking oneself up when getting knocked down. There is an element to it like this, but it is also much deeper and more profound. It also means learning from those experiences when one is knocked down and, equally important, learning how to develop the tenacity to get up after being knocked down. Consequently, the definition for resilience that is used in this chapter is the definition used in the Army's Comprehensive Soldier Fitness (CSF) program. Specifically, resilience is “the ability to grow and thrive in the face of challenges and bounce back from adversity.”²

CHARACTERISTICS OF RESILIENCE

As a general rule of thumb, it can be said that resilient people have many similar traits or attributes, even though they may have different backgrounds, colors, creeds, religious beliefs, educational levels, financial resources, or family connections. People from all walks of life and all corners of the world are resilient, but Americans—perhaps more so than anywhere else—expect their leaders and warriors to be resilient. America is the home of the cowboy, mountain man, and self-made millionaire. America's founding fathers and mothers were tough, independent men and women who could master a gun, a plow, a pen, or an axe. They knew hard times but they also knew how to overcome them, and America expects the same of its people, especially those in uniform.

Resilient people do not move through the challenges, difficulties, and adversities of life unscathed; rather they move through them with determination, patience, and courage. They are not robots or autobots. They are living, thinking, and feeling human beings. The WTL should understand the centrality of the thinking of resilient people. It is the way they think, the way they perceive the world, and the way they talk to themselves about the world that sets them apart from others. In other words, their resiliency is not the result of some genetic code, but rather it is the result of deliberate decisions and choices on their part.

According to Bonanno, resilience is reflective of a person's ability to maintain a state of overall equilibrium and goes beyond the absence of psychopathology.³ With respect to the life-threatening events or the loss of a fellow Soldier, which service members experience during deployment, it is their ability to maintain a rather healthy and stable level of physical and psychological functioning.³ Resilience is a dynamic process that changes from situation to situation.

An important feature of individuals who are resilient is self-efficacy. Bandura's theory of self-efficacy refers to an individual's perception of his or her skills and abilities to act effectively and competently.⁴ These beliefs influence the individual's actions and coping behaviors, the situations and environments that individuals choose to access, and their persistence in performing certain tasks. People's belief in their efficacy to regulate their own motivation and behavior affects every phase of personal change.⁴ Peterson and Seligman have identified characteristics of resilience that include gratitude, hope, kindness, leadership, love, spirituality, and teamwork.⁵

Resilient people possess remarkable optimism, mental agility, self-control, self-awareness, self-advocacy, and connectedness to others. Their optimism is not based on some "pie in the sky" wish, but rather it is based on a decision to choose to look for positive anchors amid the storm. They are willing to work to achieve positive outcomes. They focus on facts instead of feelings. Their mental agility enables them to move from the possibility of self-pity to the actuality of self-promotion or self-advocacy.

Studies indicate that there is a direct correlation to a patient's recuperation and his or her personal involvement in the decision-making process of his or her care plan and its implementation.⁶ WTU leaders should not be offended by Soldiers or Family members who take a proactive approach in their recovery plan. They should encourage the members of their units to take a proactive approach. Resilient people also engage their self-control much like a mountaineer engages an ice axe to arrest or stop their slide down an icy slope. Instead of allowing themselves to slip into a toxic quagmire of negative perceiving and thinking, they dig in and refuse to allow themselves to think in ways that are counterproductive. They know how to do this and when to do it. They also know themselves well enough and they are honest enough with themselves to recognize their limitations and needs as well as when they may require assistance or help (Figure 9-1). Interestingly, studies have found individuals who experience traumatic events report positive change approximately 30% to 70% of the time.⁷ Additionally, Sutker et al studied posttraumatic stress disorder in a group of Persian Gulf War Veterans within 1 year of their return to the United States and found that

EXHIBIT 9-1. *Stress Continuum Model adapted from the US Navy and Marine Corps*

READY (Green)	REACTING (Yellow)	INJURED (Orange)	ILL (Red)
<p>DEFINITION Optimal functioning Adaptive growth Wellness</p> <p>FEATURES At one's best Well trained and prepared In control Physically, mentally, and spiritually fit Mission focused Motivated Calm and steady Having fun Behaving ethically</p>	<p>DEFINITION Mild and transient distress or impairment Always goes away Low risk</p> <p>CAUSES Any stressor</p> <p>FEATURES Feeling irritable, anxious, or down Loss of motivation Loss of focus Difficulty sleeping Muscle tension or other physical changes Not having fun</p>	<p>DEFINITION More severe and persistent distress or impairment Leaves a scar Higher risk</p> <p>CAUSES Life threat Loss Moral injury Wear and tear</p> <p>FEATURES Loss of control Panic, rage, or depression No longer one's normal self Excessive guilt, shame, or blame</p>	<p>DEFINITION Diagnosed clinical mental disorder Unhealed stress injury causing life impairment</p> <p>TYPES PTSD Depression Anxiety Substance abuse</p> <p>FEATURES Symptoms persist or worsen over time Severe distress or social or occupational impairment</p>

PTSD: posttraumatic stress disorder.

62.5% of these Veterans did not have any psychological symptoms.⁸ This research has been extended to individuals who lived in Manhattan during the 9/11 incidents. Galea et al found that more than 40% of these residents did not report any symptoms of posttraumatic stress disorder.⁹ Ultimately, this is important because resilience is not an uncommon or a rare trait.³

DEVELOPING RESILIENCE

Resiliency is often the subject of debate. The debate asks the question: is resiliency something innate, something a select and unique segment of the population is born with, or is it a learned behavior that can be taught? Increasingly, as noted previously, the scientific scales are tipping in favor of the latter. Although it does appear that some people have a natural predisposition toward inner strength and confidence, the scientific evidence clearly

suggests that resiliency can be learned.¹⁰ This is critical for WTU leaders to understand. WTLs cannot make their Soldiers want to be resilient. They also cannot simply make them resilient anymore than they can make them loyal, courageous, or honorable. The work of resilience must come from within; however, leaders can provide Soldiers tools to build their resilience. This may be one of the leaders' most important tasks during their tenure at the WTU: equipping Soldiers with the necessary skills to develop a spirit and a lifestyle of resilience.

Perhaps one way to understand resiliency is to think about a car engine. An engine cannot run without fuel. The fuel of resiliency is a set of core beliefs. These beliefs may be instilled in a person from a very young age. Families, schools, and religious institutions may all contribute to the development of these core beliefs. Other individuals may develop these core beliefs at a later age. These beliefs may be influenced by the person's experiences and choices. Many times people are not even aware of when or how they developed these core beliefs. Many people are also not even aware of what their core beliefs actually are. (WTLs should assess their own core beliefs). Whatever the case may be, these core beliefs give shape and meaning to the person's view of the world. They can be sources of strength and inspiration during difficult times, or, if these core beliefs are principally negative, they can contribute to a person's downward spiral following a triggering adverse event. The other part of resiliency, the part that uses these core beliefs and moves one forward, is the engine.

The engine of resiliency is the way one processes these core beliefs or—to put it more succinctly—the engine is how a person thinks. Resilient people harness core beliefs by the way they process them and by the way they think, in such a fashion that they are not stuck in a quagmire of hopelessness, but rather they search out and see alternatives, opportunities, and new possibilities. They do not ignore their present circumstances; however, they also do not focus exclusively on them. They accept what is, but work toward what can be. Often they see what others do not.

The military has also acknowledged that resilience is a critical feature of Soldier wellness. Warrior Resilience Training is designed to enhance resilience, thriving, and posttraumatic growth for soldiers.¹¹ Warrior Resilience Training uses rational emotive behavioral therapy, Army leadership principles, and positive psychology to focus on virtue, character, and emotional self-regulation by constructing and maintaining a personal resiliency philosophy that emphasizes critical thinking, rationality, virtue, and Warrior ethos. This model also parallels the seven Army values:

1. Loyalty
2. Duty
3. Respect
4. Selfless service
5. Honor
6. Integrity
7. Personal courage

The goal of Warrior Resilience Training is to facilitate Soldiers, thriving during as opposed to only surviving their combat deployment. Additionally, the Army is embracing the CSF. According to General George Casey, CSF is “a structured, long-term assessment and development program to build the resilience and enhance the performance of every Soldier, Family member, and DA [Department of the Army] civilian.”² CSF includes a global assessment tool, self-development modules, institutional military resilience training, and master resilience training. The Army also recognizes five dimensions of strength including: (1) physical, (2) emotional, (3) social, (4) family, and (5) spiritual. Warrior Resilience Training is an evidence-based approach to help Soldiers develop critical thinking, knowledge, and skills that will ultimately help them to overcome challenges, allow them to mature, and help them to bounce back from adversity.²

HOW LEADERS CAN HELP: SPECIFIC SUGGESTIONS

The following are some specific suggestions every WTL can use to help Soldiers improve their resiliency. These suggestions sound simple enough, but their simplicity should not be confused with ease. These steps require deliberate hard work. They also take time. No one will master these skills at the outset; however, given the proper training, encouragement, and assistance, Soldiers can achieve success not only now but also in the future. In typical military fashion, these suggestions form an acronym for ease of remembering. The acronym is “BASE” (build, adjust, say no, establish connections), and if Soldiers learn it, they will have a better foundation on which to build their resilience.

The first step is to build the center. The Army is very good at building defenses. No one can beat the Army at establishing a perimeter. The Army can build walls out of almost anything: sand, dirt, or concrete. The Army can make walls that are impenetrable. The problem is, walls are primarily for defensive purposes. Soldiers put them up to protect themselves. What about

the center? What about that which the walls protect? As necessary as walls can sometimes be, attention needs to be given to the center. Resilient people go on the offense. Just as a platoon sergeant may insist that the Soldiers in his or her command make position improvements to their foxholes, guard towers, or fighting positions, people who are resilient need to improve their centers or core beliefs. Remember the analogy of the car engine? The better the fuel is in that engine, the better that car will run. Soldiers should be helped to develop their core beliefs, the central philosophies of their life.

The second step is to adjust lenses. People have various perspectives or vantage points. If one is a witness to a crime, for example, he or she may see something other witnesses cannot see simply because everyone does not share the same physical space. In the same way, WTLs should assist their Soldiers to adjust how they are thinking because they do not stand, sit, or lie in the same place. Leaders need to assist Soldiers to see what they may not be able to see from their vantage point. Leaders need to assist the Soldiers to focus on facts and not simply feelings. When Soldiers suffer a devastating injury or illness, emotional turmoil occurs; however, leaders can show Soldiers a different angle with sensitivity and compassion. The manner in which one perceives something has a powerful effect on how one feels about it. Consequently, WTLs may need to assist their Soldiers see life from a different angle.

The third step is that leaders need to help their Soldiers say no. The bumper sticker that reads “Just say no to negativity” has an ironic beauty and truth. As contradictory as it may sound, that is exactly the attitude Soldiers need to possess. They need to focus on the positive. They need to turn off negative ways of thinking. They need hope. They do not need reinforcement of any negative methods of thinking, perceiving, or feeling. They need to reinforce the positive. Negative people and thoughts can influence a person in a debilitating way. Leaders need to ensure that their Soldiers stop negativity in its tracks.

The fourth step is that WTLs need to assist the Soldiers in their command to establish connections. Prisoners of war are put into solitary confinement not only to punish them, but also—and perhaps more importantly—to break them. Human beings are social creatures who are more apt to fail, make mistakes or poor choices, or simply quit if they are alone. This is one of the reasons leaders need to be particularly alert to anyone who seems to want to withdraw or pull away from their caregivers or family or unit members. WTLs need to facilitate the establishment or reestablishment of multiple connections with their Soldiers. In this fight, just as on the battlefield, they need to know someone has their back and people care about what happens to them. Ensuring they have access to modern communication methods is important, but leaders cannot overlook the necessity of face-to-face

EXHIBIT 9-2. *Seven “C’s” of Stress First Aid (adapted from the US Marine Corps)*

1. CHECK OSCAR: observe, state role, clarify role, ask why, respond 2. COORDINATE Get help and refer as needed	CONTINUOUS
3. COVER Get to safety ASAP 4. CALM Relax, slow down, and refocus	PRIMARY AID
5. CONNECT Get comfort from others 6. COMPETENCE Restore effectiveness 7. CONFIDENCE Restore self-esteem and hope	SECONDARY AID

relationships. It is one thing to be connected over the Internet; it is a different thing to sit in a room and look into another’s eyes.

The fifth step is that WTLs should not underestimate their own power to improve their Soldiers’ lives through the simple act of genuinely listening and caring for them. Many Soldiers have expressed the desire to feel valued or appreciated by their leaders. They want to know their leaders are compassionate and genuinely care about those in their command. This does not imply that “tough love” is inappropriate or that good order and discipline are not necessary in a WTU. To the contrary, Soldiers will rise to the standards that leaders set for them. What they need, however, and what they want is to be treated with dignity, respect, and compassion. Do not mistake compassion for weakness. Instead, leaders need to understand that it is truly only the strong who can be compassionate, and their Soldiers’ strength and compassion will grow in direct relation to what they offer them. Although it may be uncomfortable for some WTLs to genuinely display personal empathy, they must see this as their own opportunity to grow, for it is only when people are uncomfortable that they can truly grow as human beings. Boot camp was not comfortable, but all military members are better for having experienced it. A tool that WTLs may find useful is the seven “C’s” of stress first aid as described in Figure 9-2.

WHAT SOLDIERS MUST DO

To achieve ultimate success, each Soldier must follow three basic rules of life, described by the acronym “FOB” (forward thinking, looking for opportunities, and building a new life). First, Soldiers must be forward thinking because much of their life and experiences are in front of them. Acquiring impairments can be a defining moment in a Soldier’s life, but it does not need to define them. Soldiers should be engaged in planning for their future and setting short- and long-term goals. It is acceptable to set high goals; even if the Soldier falls short, he or she may have made admirable achievements.

Second, Soldiers need to take advantage of the opportunities that present themselves. In ancient Chinese, the characters for adversity and opportunity are the same. Soldiers need to learn to turn adversity into advantage and action into accomplishment. Many Soldiers have experienced severe wounds, illnesses, and injuries and have gone on to live truly amazing lives. In 1946, a group of World War II Veterans in Department of Veterans Affairs hospitals organized and founded the Paralyzed Veterans of America when there was little belief that most of them would ever leave the hospital. Those pioneers went on to change the shape of America for future generations, and most Veterans with spinal cord injuries live long, healthy, and full lives. Nearly continuous advances occur in medical research, technology, and social integration, and it is certain that Veterans with disabilities will have better health and more opportunities in the future.

Third, it is the responsibility of every Soldier to build a new life. By setting, pursuing, and accomplishing goals, and creating and maintaining relationships, Soldiers can build a new life and perhaps a better life for themselves and the ones they love. Modern psychology indicates that happiness stems from overcoming challenges and building positive experiences. Early on this can be as simple as regaining independence, and grow to include participating in sports and recreation events (such as the Warrior Games), and later to achieving educational, career, or family goals. Each Soldier is unique, but everyone is alike in that it is the experiences over a lifetime that define them and bring happiness. Each Soldier should create a plan for assembling his or her FOB and work toward living a life well lived.

WHAT SOLDIERS MUST KNOW

There is a very real possibility that Soldiers may be overwhelmed. They may feel as if life is moving too quickly or that it is spinning out of control. Just

a short time ago, they may have been out on a mission, driving back from the mall, or just coming down some steps they have traversed a thousand times and then—in the blink of eye—their world changed. They may have undergone painful and difficult surgeries or treatments. They may have been surrounded by a host of strangers and loved ones who asked difficult questions. Most of them were not acquainted with clinical or rehabilitation settings, language, or routines before their world suddenly changed. What may be familiar to clinicians, therapists, and other care providers is foreign to them, and this lack of familiarity may cause stress and anxiety. Therefore, suggestions follow about what they should know and who they should contact with any problems or issues they may encounter.

First, Soldiers must understand that their lives have changed, but they are not over. All Soldiers had hopes, dreams, and aspirations before they came through the hospital doors. There were things they enjoyed and others that they looked forward to doing. The ability to anticipate and fondly recall past activities are two of the things that make people human. Soldiers need to understand that even though their circumstances, bodies, or skills may have changed, their hopes, dreams, and aspirations do not have to change. They do not have to give up the hobbies or activities they formerly enjoyed. They may have to rethink how they accomplish those goals or modify how they do the activity they always enjoyed before “it” happened, but they must understand and believe that life goes on. Resilient Soldiers come to believe that they are limited only by their own creativity. As mountaineers are prone to say, there is more than one way to the summit. Mountaineers do not have to go the way everyone else does and neither do Soldiers.

Second, Soldiers must know and believe they are not alone. Significant injuries and/or illnesses can have a sinister power to isolate. Those who have sustained a terrible injury or illness may feel a deep chasm separating them from the rest of humanity. It is also possible that some Soldiers may choose to isolate themselves because of fear, shame, or anger. Whatever the case, WTLs should not allow them to become or even feel disconnected. Help Soldiers to connect or reconnect with others. Provide them all the resources available. WTLs should develop a campaign plan for Soldiers that utilizes all the tools in their arsenal such as nurse case managers, primary care managers, nurse practitioners, therapists, social workers, patient advocates, ombudsmen, squad leaders, family assistance center staffers, chaplains, and family readiness groups, as well as additional resources such as the American Red Cross Army Substance Abuse Program; Morale, Welfare and Recreation; Army Community Service; and Army Wounded Warrior Program, to name a few. Provide warriors a list of specific and accurate contacts at the WTU.

Third, Soldiers must learn how to organize and prioritize the huge volume of material and information they receive. Transferring into a WTU can be an overwhelming experience, especially in light of the vast amount of information Soldiers and their loved ones already receive. They need someone to help them sift through what is important and what is not, and what are close-range targets and what are distant-range targets. They need to separate fact from fiction and RUMINT (rumor intelligence) from authorized distributions of information. This is one of the places where noncommissioned officers can use their experience, training, and wisdom to personally mentor and assist their Soldiers. Like many leadership tasks, it is an awesome responsibility; however, it is absolutely critical to a Soldier's successful navigation of their rehabilitation and time at the WTU.

Fourth, Soldiers must know their service and sacrifice are genuinely appreciated. Expressions of gratitude must be sincere and heartfelt. Wounded and injured Warriors do not tolerate disingenuous words or displays of thanks. They need to know they have made a difference and that the world is a better place because of their willingness to put themselves on the line. They need to be reminded that they are a part of an elite and select line of American patriots and that their nation, their leaders, and their WTLs appreciate their willingness to join all those who raised their hand and said, "this we'll defend." They need to know that the defense they offered was honorable and noble and that their nation will forever remain humbly grateful.

CONCLUSION

Human beings are remarkably resilient. They possess a strength of spirit that is often more powerful than modern weapons. WTLs cannot give someone resilience, nor can they make someone resilient. It is, however, within their power to help the Warriors in their command to develop their own resiliency. Being in a WTU can be an extremely difficult assignment for the leaders. Leaders will experience demands unlike in any other unit. However, if leaders do everything in their power to help their Soldiers and advocate for them, if they always place their needs first and live by the Army's seven values, then they can have a significant impact in their Soldiers' lives. If leaders can assist Soldiers' development of resiliency, they will not only aid recovery, but will also equip them to be better, happier, healthier, and more productive citizens throughout their entire lives.

Being in the WTU is also an extremely difficult assignment for Soldiers. They did not volunteer for this unit. Almost all of them are facing issues of loss and change, many of which go beyond the obvious signs of loss such as the loss of limbs or cognitive ability. Many Soldiers have suffered a loss of identity because they are no longer in their indigenous unit with all their buddies. They may also struggle with the loss of the skills and abilities they once had, things they took for granted before their injury or illness. They may worry about issues such as sexual intimacy, social acceptance, and mortality. The scars they have are not only external; many of them may also possess scars internally on their hearts, spirits, and minds. Be sensitive to all of their wounds, not just the ones that are clearly visible. Take advantage of all the resources available and help Soldiers—whatever their personal circumstances—to be Army Strong.

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*An army is a team.
It lives, eats, sleeps, fights as a team.*



GENERAL GEORGE S. PATTON, JR.

CHAPTER TEN

Army Programs Related to Warriors in Transition

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INTRODUCTION

A Warrior in Transition (WT) has one foremost job: to recover. The Army recognizes the physical, psychological, and emotional challenges for Soldiers and their Families that accompany a medical hold-

over, active duty medical extension, medical hold, or any other medical issue requiring at least 6 months of treatment or rehabilitation.

As a result, the Army has instituted many programs to facilitate not only the healing process but also the steps taken afterward for a Warrior to either return to duty or transition to serving the nation in other ways. All wounded, injured, and ill Soldiers are assigned to a Warrior Transition Unit (WTU) where they participate in employment, education, and internship initiatives. The Warrior Transition Command provides centralized oversight, guidance, and advocacy to empower wounded, ill, and injured Soldiers, Veterans, and Families through a Comprehensive Transition Plan (CTP) for successful reintegration back into the force or into the community with dignity, respect, and self-determination. Members with severe medical needs are also assigned to the Army Wounded Warrior Program (AW2). As of October 2009, nearly 9,000 Soldiers and Veterans were being cared for in a WTU or the AW2.¹

This chapter highlights some of the programs that aid in the holistic recovery process and provide Soldiers useful tools after illness or injury.

COMPREHENSIVE TRANSITION PLAN

As part of the recovery process, WTs participate in the six-part CTP. This structured program is designed to help WTs adjust to the changes involved in either returning to active duty or becoming Veterans. Each plan is individualized, developed by the Soldier and his or her WTU support network, and sets personal and professional goals following recovery.

The six steps toward recovery, which are outlined on the US Army Warrior Transition Command Web site, are the following²:

1. Intake: WTs come through the WTU Headquarters and Headquarters Company
2. Assessment: the WT, “triad of care,” and other personnel evaluate the WT’s health and personal condition
3. Goal setting: the WT selects a “transition track” that could be to continue on active duty (COAD), COAD with a new military occupational specialty in coordination with the Military Occupational Specialty Review Board, or to separate from military service to become a successful Veteran
4. Rehabilitation: includes medical, employment, and physical fitness
5. Pre-transition: the WT’s progress is reviewed weekly by the “triad of care” and periodically by the WTU commander through focused transition reviews

6. Post-transition: WT outprocesses through WTU Headquarters and Headquarters Company with information for referrals to relevant resources

ARMY KNOWLEDGE ONLINE AND DEFENSE KNOWLEDGE ONLINE

The CTP is hosted as an automated service (aCTP) via Army Knowledge Online (AKO), the US Army's main intranet. This informational gateway provides services to members on active duty and Reserves, the National Guard, Department of the Army civilians, select contractors, retired service members, and families of service members. Defense Knowledge Online is a secure-access information-sharing network of the Department of Defense (DoD), and it uses AKO as a platform to foster increased sharing of information between DoD and its partner communities. Registering for an AKO account is mandatory upon Army enlistment. Instructions for online registration can be found at <http://www.us.army.mil/>. The AKO help desk can be reached by e-mail at help@us.army.mil. With DSN (OCONUS), dial 312-560-1110 and ask the World Wide Operator to connect to 866-335-2769. Or call 1-866-335-2769 (ARMY) and select option 2.

ARMY WOUNDED WARRIOR PROGRAM

The AW2 helps seriously wounded, injured, and ill Soldiers, Veterans, and their Families. With dozens of WTUs at Army installations across the continental United States, the AW2 currently provides much needed care for more than 7,000 Soldiers and their Families.³ Support for AW2 Soldiers begins at the time of injury and continues throughout the Wounded Warrior Lifecycle of Care. The six phases of this cycle include the following:

1. evacuation to continental United States military treatment facilities;
2. treatment;
3. rehabilitation;
4. disability evaluation by the Medical Evaluation Board (MEB) and Physical Evaluation Board (PEB);
5. returning to the military or starting new civilian employment; and
6. long-term management and support.

All AW2 Soldiers and Families receive an extensive support network to guide them through both medical and nonmedical stages of recovery. Medi-

cal aid comes from a WTU's "triad of care," which consists of a (1) primary care clinician, (2) case manager, and (3) squad leader. The triad structure is designed to mirror the environment of a military unit and also to maintain continuity of care. Soldiers and their Families also receive support from an AW2 advocate, assigned to assist in all nonmedical issues, such as logistics and career and personal planning. More than 120 advocates are stationed nationwide and at overseas locations in military treatment facilities, Department of Veterans Affairs (VA) facilities, and military installations. The AW2 advocate program may be contacted by phone, e-mail, or regular mail. Contact information is available online at <http://www.aw2.army.mil/about/contact.html>.

NONEMPLOYMENT INITIATIVES: INTEGRATED DISABILITY EVALUATION SYSTEM

The objective of the Integrated Disability Evaluation System (IDES) is to maintain an Army force at peak physical fitness. To do so, the program separates service members physically unable to COAD. It provides compensation and benefits to those who leave the military due to injury or illness incurred during their service.

IDES eliminates duplicative elements of the DoD and VA legacy disability systems. These legacy processes required the service member to undergo physical examinations in both the medical treatment facility and the VA with disability ratings given by both departments. Soldiers often waited months to more than a year after separation to complete the VA process. Under the IDES, the Soldier undergoes a compensation and pension examination (or C&P exam) that is conducted to VA standards and used by both departments. A single disability rating is given by the VA that is used by both departments with the goal of beginning disability payments within 30 days of a service member's separation. Under the IDES, the time from initiation of the board process to final determination of benefits has decreased from 540 days to 295 days for regular Soldiers and 305 days for Reserve/Guard members.

Entry into the IDES is through the VA/DoD Joint Disability Evaluation Referral form, outlining the conditions that are considered as the basis of the fitness for duty determination. The Soldier is then assigned a physical evaluation board liaison officer (PEBLO) who will be the point of contact throughout the IDES process. The PEBLO works with a VA medical services coordinator to schedule the VA C&P exam. The C&P exam report and the clinical record then become the basis of the narrative summary ("narsum"). The

narsum, written by a provider in the IDES, summarizes the Soldier's medical history with specific comments regarding a given diagnosis being medically acceptable or unacceptable for retention in accordance with Army Regulation 40-501, chapter 3. After submission of the narsum and the DA Form 3947 (Medical Board Proceedings, signed by two physicians) to the PEBLO, the service member has 3 days to accept the findings of the MEB, request an Independent Medical Review (IMR), and/or elect to submit an appeal.

After the MEB phase of the process is complete, the PEBLO forwards the service member's file, including the narsum, the C&P exam, profiles, commander's statement, appeal/IMR (if done), and other supporting documentation, to the PEB. The PEB, consisting of three officers, one of whom may be a Reserve officer, and with a line officer serving as the board president, is the only military board that can determine fitness for continued military service. It considers the findings of the MEB and determines whether the medically unacceptable conditions are fitting or unfitting for duty, weighing the requirements of the Soldier's military occupation specialty, commander's statement, performance reports, administrative files, and profiles. The first determination is by informal board (IPEB), where the case file is independently reviewed by the three board members. Once the IPEB has rendered a decision as to fit or unfit, the case is forwarded to the VA Disability Rating Service. The ratings are returned to the PEB for review by the Soldier, who can accept or appeal the rating decision. If the Soldier does not agree with the findings of the IPEB, he or she may elect to appear before the Formal Physical Evaluation Board (FPEB). At the FPEB, the Soldier is assigned legal counsel if he or she wishes, can submit additional records, and/or bring his own representation or supervisor. After the FPEB findings are briefed to the Soldier by the PEBLO, the Soldier may elect to accept the findings or submit an appeal. Once the case is finalized by the PEB, further appeals are to the Board of Corrections for Military Records.

ARMY'S WARRIOR CARE AND TRANSITION PLAN

Some wounded, injured, or ill Soldiers want to recover in their hometowns and the Army recognizes the value of doing so. To accommodate them, the Army's Warrior Care and Transition Program allows commanders to transfer eligible Soldiers with serious wounds, illnesses, and injuries to local WTUs. The plan represents a break from past protocol, in which Soldiers who needed medical care were assigned to active duty WTUs.⁴

Community-based WTUs enable Warriors to use local healthcare facilities and be near family while remaining under the supervision of Army unit

leaders. The initiative is one part of the Army's awareness that familial support plays an important role in effective and comfortable recovery.

SOLDIER AND FAMILY ASSISTANCE CENTERS

Upon arrival at a WTU, patients and their families are encouraged to get in touch with the Soldier and Family Assistance Center (SFAC). This team, a group of Soldiers and civilian employees appointed by the garrison commander, provides help and services for WTs and their families to make their stay as easy as possible. Several other military bases in addition to the Walter Reed National Military Medical Center have SFACs of their own.

The assistance that an SFAC provides can take many forms. Some services at an SFAC include assistance in money management, identification cards, ground transportation and housing, family support programs, free child care, religious and pastoral counseling, Veterans' benefits counseling, job fairs, and relationship building. However, services are not limited to those listed; SFAC functions as a one-stop source of information and referrals for administrative, financial, personal, and vocational matters.

ARMY FAMILY ACTION PLAN AND FAMILY READINESS GROUP

In the late 1970s, Army spouses who wanted to improve their Families' quality of life decided the way to do so was through increased communication.⁵ By openly discussing Army-related problems and volunteering their time to help fix them, the Families planted the seed for the Army Family Action Plan (AFAP), a forum for all Army members to express their opinions, concerns, and recommendations to Army leadership. AFAP is the tool by which service members and their families can have a say in shaping Army programs and policies.

Since its beginning, AFAP has had an impressive record. The vast majority (more than 90%) of AFAP issues are resolved at the local level. However, those issues that need more support go to mid-level AFAP conferences and finally to the Headquarters Department of the Army AFAP Conference, in which Army delegates discuss which issues will be worked on by leadership staff. As of June 2010, concerns voiced through the program have shed light on more than 667 Army issues; among these, 117 resulted in legislative changes, 162 inspired policy and regulatory changes, and 178 led to improved programs and services.⁶ A majority of the changes have impacted not just the Army, but also all the uniformed services.

Any Army member can submit issues, at any time, through his or her command's AFAP program manager, who can assist with writing the issues to conform to AFAP guidelines. The program manager can also teach service members and their Families about AFAP during meetings of a Family Readiness Group, a voluntary organization of Families, Soldiers, volunteers, and civilian employees to provide information and moral support to one another. To learn more, visit the official US Army Reserve Family Programs Web site at www.arfp.org and then click on the Programs tab for AFAP and Family Readiness Group.⁷

COMPREHENSIVE SOLDIER FITNESS

To cultivate a force of healthy and balanced Soldiers, Army civilians, and their Families, the Command and General Staff College offers the Comprehensive Soldier Fitness program, which includes guidelines and on-line and on-site training.⁸ The program includes individual evaluations, virtual and classroom training, and help from resilience experts to improve Soldier performance and resilience in multiple lifestyle areas: physical, emotional, social, family, spiritual, and career.

Training is not a single course, but rather involves a continued acquisition of skills and attitudes needed for persistent healthy living. Service members are taught how to manage challenges, bounce back after adversity, and use these skills on a daily basis and pass them along to others. The Comprehensive Soldier Fitness program aims to maximize each service member's thinking and behavior toward a service of "strong minds and strong bodies."

EMPLOYMENT INITIATIVES: ARMY WOUNDED WARRIOR EDUCATION INITIATIVE

A partnership between the Army and the University of Kansas allows severely injured warriors to earn a master's degree from a university, paid for by the Army.⁹ Initiated by the Secretary of the Army, the Army Wounded Warrior Education Initiative aims to harness the knowledge and talents of Warriors who leave the service. After obtaining their advanced degrees, Soldiers and Veterans can apply their new skills to continue serving the Army's academic community.

Eligibility for the program extends to active duty Soldiers and medically retired Soldiers who are part of the AW2. Service members must already have their baccalaureate degree and also must be physically and mentally capable

of embarking on graduate-level work. Program leaders develop a personalized educational initiative to match a Soldier's background and interests and then assist with job placement following completion of the program. Warriors who complete the program follow several paths: active duty Soldiers continue in the Army, with an obligation of 6 years of duty; meanwhile, Warriors retired due to injuries can become civilian faculty or staff at the Command and General Staff College or at the Combined Arms Center at Fort Leavenworth, Kansas.

Thirteen degree programs are available including history, higher education administration, supply chain management, international studies, political science, business administration, economics, anthropology, computer science, public administration, sociology, curriculum and teaching, and information technology.

Application to the program requires the following:

- cover letter detailing a Soldier's interests and career goals;
- resume;
- document discussing previous leadership, ability to research and organize work, and oral and written communication skills;
- transcripts from accredited educational institutions where college courses were taken; and
- completed DA Form 1618 (applicants for military positions) and copies of all DD-214 (applicants for civilian positions).

OPERATION WARFIGHTER PROGRAM FEDERAL NONPAID INTERNSHIPS

Sponsored by the DoD, Operation Warfighter (OWF) is a temporary, unpaid internship program. While open to all US citizens on active duty, the program has a particular mission as a tool in the recovery process for injured or ill service members. It provides the chance to engage in meaningful work that can help service members to transition away from the hospital setting, either back to regular military duty or to new civilian employment. Matching Warriors' interests with internship opportunities, OWF allows service members to exercise their existing skills and develop new ones in a work environment that benefits them and employers.

A wounded, injured, or ill Soldier must be medically cleared by the chain of command and "triad of care" before OWF involvement is allowed; although the program assists in the healing process, medical appointments and treatment are the first priority. To apply, a Soldier must submit his or her resume along with a short description of the type of temporary employment

desired. A typical internship lasts 3 to 5 months, with a Soldier working 20 hours per week, although durations and hours vary based on the nature of the individual's medical recovery circumstances. The program emphasizes that recovery comes first and foremost: no internship will compromise a Warrior's health or treatment.

ARMY CAREER AND ALUMNI PROGRAM

Moving from a military occupation to a new job can be stressful. That is why the Army Career and Alumni Program (ACAP) was created to provide job assistance support for a smart, smooth, and successful transition. The centrally funded and run program emphasizes the benefits of beginning the job search early and provides counseling and resources to Soldiers often before they leave active duty. Typically, ACAP consists of a briefing presentation and a workshop that last—in total—about 3 and a half days. Although ACAP helps warriors with career goals, it does not offer specific skills training.

For all Soldiers who have at least 180 days of active duty upon separation, ACAP is required. Nonretiring Soldiers have up to 1 year before separation to utilize ACAP, while retirees have up to 2 years before retirement to use the services.¹⁰ A Soldier can join ACAP through the program's official Web site or by contacting a local ACAP Center.¹¹ ACAP Centers are located on most major Army installations. A complete listing can be found on the online ACAP Centers Map at www.acap.army.mil.¹²

CONTINUATION ON ACTIVE DUTY OR ON ACTIVE RESERVE

Severely wounded or ill Warriors still have the chance to serve: that is the message of COAD and Continuation on Active Reserve (COAR) for National Guard and Reserve Soldiers. The Army instituted the continuation programs in response to a deep awareness of and appreciation for the knowledge and skill sets that Soldiers possess, despite wounds or injuries. The type of work that COAD and COAR Soldiers pursue ranges widely and includes leadership, administration, conduction of training sessions, equipment testing, recruitment, and instruction.

Soldiers reviewed as unable to COAD via the IDES may apply for the continuation programs if they meet the following criteria:

- for COAR, has served 15 to 20 years; for COAD, has 15 to 20 qualifying years of service for nonregular retirement;

- is qualified in a critical skill or shortage military occupational specialty; and
- has a disability due to combat or terrorism.

The AW2 hosts advocates at VA facilities, military treatment facilities, and military installations to assist Soldiers interested in applying to the continuation programs. Advocates identify interested Soldiers, counsel them on their options, notify the Human Resource Command, and assist during the application process.

ARMY SPOUSE EMPLOYMENT PARTNERSHIP

Spouses of Soldiers can access employment assistance from SFAC counselors or the Army Community Service (ACS) team via the Army Spouse Employment Program. Recognizing that about 55% of Army spouses are in the workforce and contribute between 20% and 40% of their families' total income, ACS counselors have formed alliances with local businesses (including ACAP, Starbucks, Verizon, and Sears Holdings).¹³ The ACS team aims to help spouses find fulfillment through employment education and training opportunities. Launched in 2003, the Army Spouse Employment Program has a database of about 50,000 jobs.¹⁴ Spouses can view job opportunities and submit resumes at www.myarmylifetoo.com or www.msjs.org.

TRAUMATIC SERVICE MEMBERS' GROUP LIFE INSURANCE

As of December 1, 2005, every Soldier is covered under Service Members' Group Life Insurance also has Traumatic Service Members' Group Life Insurance. The extra coverage is designed to help service members and their families deal with the major expenses that arise after a severe wound or injury. Payment ranges from \$25,000 to \$100,000, based on the nature of the wound or injury.¹⁵

To receive payment, the service member must have sustained a traumatic wound or injury, which is listed as a qualifying loss. A traumatic event is defined as an encounter with an external force, violence, or weapon (chemical, biological, or radiological), the accidental ingestion of a contaminated substance, or the exposure to other elements that harm the body. A traumatic wound or injury is the actual physical harm to the body caused by the traumatic event. Finally, a qualifying loss is a type of traumatic wound or injury

eligible for payment. These wounds or injuries include total and permanent loss of sight, hearing, or speech; paralysis of all four limbs (quadriplegia), upper and lower limbs on one side (paraplegia), or one limb (uniplegia); burns (at least second degree, covering 20% of the face or body); amputation of hand, thumb or four fingers on the same hand, foot, all toes on the same foot, big toe only or four toes on the same foot; limb salvage of arm or leg; facial reconstruction; traumatic brain injury; coma; and loss of ability to perform activities of daily living, such as washing and dressing.

Traumatic Service Members' Group Life Insurance is granted retroactively, covering wounds or injuries occurring after October 7, 2001. To file a claim, a Soldier must complete a claim form, have it certified by a physician, and forward both the form and the supporting medical documents to his or her branch of service by e-mail, regular mail, or fax. The application form can be downloaded from the VA website, requested from a service department point of contact, or requested from the Office of Servicemembers' Group Life Insurance by calling toll-free 1-800-419-1473 or e-mailing osgli.claims@prudential.com.^{16,17} If a claim is denied, the Soldier has the option of appealing the decision.

COMBAT-RELATED SPECIAL COMPENSATION

Retired Veterans with combat-related wounds or injuries may receive tax-free monthly payments through the Combat-Related Special Compensation. A Veteran is eligible for the program if he or she (1) is retired and receiving military retired pay; (2) has given at least a 10% rating for service connected disability or condition from the VA, according to the DoD's guidelines for combat-related injury; (3) has military retired pay reduced by VA disability payments; and (4) is able to provide documentation that the wound or injury was combat related. Documentation of a combat-related wound or injury can be obtained from VA records or from the National Personnel Records Center. Detailed instructions, including helpful contact information, on how to document combat-related injuries can be found on Military.com's Benefits and Resources Web page.¹⁸ Payment through the Combat-Related Special Compensation is an amount equal to or less than the Soldier's length of service retirement pay and VA disability pay. Compensation is deposited to the same account as the one in which the Veteran deposits retired pay. Extra compensation may be provided if the Veteran has dependents.

CONCLUSION

The message of the Army is clear: it takes care of its Soldiers regardless of their health status. The various programs outlined in this chapter aim to improve the well-being of WTs through a multitude of avenues, including physical, psychological, emotional, social, and vocational. For holistic healing and a continued productive life, the Army offers the support and resources needed.

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In response to the radically changing business environment, **CHIEF EXECUTIVE OFFICER F. DAWN HALFAKER** founded Halfaker and Associates in January 2006, recognizing the growing need for dynamic consultants with specialized experience to provide national security services to the federal government.

Captain (Retired) Halfaker has extensive management experience as a military police officer in the US Army. After a tour in Korea, she deployed with the 3rd Infantry Division as a platoon leader and deputy provost marshal in support of Operation Iraqi Freedom. She was subsequently wounded during



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In addition, Halfaker served as a military liaison to the House Armed Services Committee, where she advised the committee chair on central Department of Defense issues. Since 2005, she has worked with the





Defense Advanced Research Projects Agency, specializing in technical consulting for the Defense Sciences Office. Her mission is to help initiate research that will provide advanced capabilities to the military. Halfaker also remains very active with Veterans' affairs and is a member of many of the Veterans' service organizations and serves on various advisory committees.

Halfaker holds a bachelor of science degree from the US Military Academy at West Point and a master of arts in security studies from Georgetown University in Washington, DC.

*A hero is not one that achieves inhuman deeds through
spectacular powers, but one whose ordinary deeds are
accomplished in face of every challenge.*

*And ultimately,
a hero is one that lives and strives and sacrifices
for ideals greater than themselves, and for people whose
dreams are so much smaller than their own.*

★ ★ ★

DANIEL NICHOLS
EXECUTIVE DIRECTOR, MILITARY TO MEDICINE

CHAPTER ELEVEN

Selected Veteran and Military Service Organizations Related to Warriors in Transition

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INTRODUCTION

Military service organizations (MSOs) are focused on assisting active duty Soldiers and their Families, whereas Veteran service organizations (VSOs) concentrate on working with Soldiers after they have left active military service. Frequently, the missions of MSOs and VSOs overlap in some aspects, as most are interested in helping Warrior Transition Unit (WTU) Soldiers and their Families at all stages of their medical rehabilitation and community reintegration. Hundreds—if not thousands—of organizations strive to provide assistance to members of the armed forces, their Families, or to Veterans. Far too many exist to cover in a few pages. Therefore, an overview of selected MSOs and VSOs that have worked closely with Warriors in transition and that have broad-reaching impact will be presented.

VETERAN SERVICE ORGANIZATIONS

VSOs are critical partners in the rehabilitation, community reintegration, and long-term resilience and ultimate success of wounded, injured, or ill Soldiers. VSOs may play many roles at various stages throughout the Warrior transition process. In the early stages of an injury or illness, most Soldiers have had little or no exposure to Veterans with similar impairments. Similarly, Warrior Transition Leaders may not have worked with Soldiers or Veterans with disabilities. This is natural because most people have little experience with disability, although people with disabilities represent about one of every seven Americans. Members of VSOs can be excellent role models and provide insight into adapting to long-term impairments. Warrior Transition Leaders should consider working with VSOs to provide training to their leaders and assist as peer counselors to their Soldiers. Peer counseling is more effective if the counselors are trained, similar in age, and have comparable life experiences.

Often VSOs can provide information to Soldiers and their Families about the medical rehabilitation process, the Soldier's perspective on negotiating Department of Veterans Affairs (VA) processes and clinical services, and on becoming productive Veterans. Many VSOs have professional service officers, who provide free advice to Soldiers and their Families about VA and Department of Defense (DoD) benefit programs and assist Soldiers with their applications. This can comfort Soldiers and their Families about their futures. VSOs that are chartered by Congress to provide these services to all Veterans regardless of whether they are members of the VSO or any Veteran organization. VSOs also may represent the Soldier or Veteran in front of the Court of Veterans Appeals, should that be necessary. VSOs are often viewed as partners to Soldiers and Veterans over a lifetime because they provide resources in local communities.

Many VSOs provide social and recreational activities that are important to the medical rehabilitation and long-term reintegration of Soldiers, whether they continue on active duty or become successful Veterans. Socialization, recreation, and sports are all critical elements to a comprehensive rehabilitation program. Sports, fitness, camaraderie, and teamwork are all important attributes of strong Soldiers and solid military units. These factors need to be reintroduced and reinforced through the medical rehabilitation process.

Kielhofner reported that the more people's lives are filled with things that interest them, the higher their satisfaction with their quality of life.¹ Sports, recreation, and social activities, which influence choice about action and behavior, have a key role in enabling an individual to adapt to disability and

reengage in life.¹ Therefore, VA has partnered with the Paralyzed Veterans of America (PVA), the Disabled American Veterans (DAV), and US Paralympics to provide sports and recreational activities as part of its rehabilitation and community reintegration mission. Other VSOs such as the Wounded Warrior Project provide a variety of sports, recreational, and social integration activities. Events such as the VA-PVA National Veterans Wheelchair Games or the DAV National Disabled Veterans Winter Sports Clinic provide Soldiers the opportunity to be introduced or reintroduced to sports, learn adapted sports, and discover their strengths and abilities. These and similar programs also provide opportunities to Soldiers to be introduced to Veterans who have undergone or who are experiencing similar changes in their lives. They also teach Soldiers how to conquer the challenges of travel, new locations, and unfamiliar activities in a controlled and secure setting.

The Warrior Games, a partnership with the Warrior Transition Command, Marine Corps Wounded Warrior Regiment, US Paralympics, and United Service Organization—among others—are intended to bring Soldiers together early in their rehabilitation and reintegration process in friendly inter-service competition. The Warrior Games are intended to challenge and motivate Soldiers to strive for higher achievement. Participants in the Warrior Games are encouraged to return to their units and serve as role models for their fellow Soldiers. Recreation is a valuable strategy for inclusion in activities that are culturally valued.² Sports and recreation create an arena for continuing the gains of institutionally based medical rehabilitation by challenging personally held ideas about disability and impairment and testing a new self-concept that includes acceptance of disability.³ Lack of opportunity and information about adaptive fitness makes it more likely that individuals will fall into the negative health consequences of inactivity, repetitive strain injury, and obesity.⁴⁻⁶ Teamwork provides opportunities for learning about abilities and adaptations on and off the field-of-play. Sports build a sense of confidence and acceptance of disability.⁷

VSOs also advocate for Veterans on many levels, from assisting individual Veterans in filing VA claims and obtaining support, to working on local, state, and national policy, regulations, and legislation. VSOs have made important inroads in the benefits for Soldiers, Veterans, and their Families. At times the role of VSOs as advocates may place them in conflict with the directives or goals of the DoD or VA; however, this should not be a barrier to working with them on issues and projects of common interest.

DESCRIPTIONS OF MILITARY SERVICE ORGANIZATIONS AND VETERAN SERVICE ORGANIZATIONS

ARMED FORCES SERVICES CORPORATION (AFSC; www.afsc-usa.com) has a 130+ year history of providing services to Soldiers, Veterans, and their Families. AFSC's mission is "to optimize the lives of Warriors, Veterans, and their Families, and strengthen the continuum of care by bringing innovative solutions to today's military community." AFSC helps Soldiers, Veterans, and their Families to understand and manage their military benefits and to obtain all of the services to which they are entitled. Through Operation Warfighter, AFSC works with Warriors in transition to organize meaningful internship activities near the facilities where they are in transition. AFSC helps Soldiers to build their resumes, receive additional training or maintain their skills, investigate employment interests, and develop important job skills through work experience within a government agency. AFSC supports Soldiers in their career goals whether they plan to continue on active duty or return to employment as productive Veterans.

BLINDED VETERANS ASSOCIATION (BVA; www.bva.org), which is chartered by Congress, is a service and advocacy organization for blind and visually impaired US military Veterans. BVA members are blinded Veterans committed to assisting other blinded Veterans. BVA offers service programs, regional support groups, information resources, and advocates for Veterans. BVA's goal is to continually make life better for blinded Veterans by providing encouragement and support. Membership is open to all legally blind Veterans regardless of the cause or period of service.

DISABLED AMERICAN VETERANS (DAV; www.dav.org) is focused on building better lives for Veterans with disabilities from all eras. DAV, which is chartered by Congress, uses chapters and state organizations across the United States and in other countries where Veterans reside to form a national network of support, camaraderie, service, and advocacy. DAV employs national service officers to assist Veterans throughout their lives to obtain VA, DoD, and other benefits that they have earned, and also transition service officers to help Soldiers succeed as they move from military life into their civilian communities.

MILITARY ORDER OF THE PURPLE HEART (MOPH; www.purpleheart.org) is composed of current and former members of the armed forces who have been awarded the Purple Heart medal for wounds incurred in combat.

MOPH provides support to all Veterans and their Families through a variety of programs and activities. MOPH, which is chartered by Congress, has national service officers who help Veterans obtain all of the benefits that they have earned. MOPH operates the following programs:

- a VA volunteer program that provides much needed volunteers to help hospitalized Veterans;
- an Americanism program that promotes awareness of history and the quest for freedom;
- a national scholarship program that provides competitive scholarships to eligible applicants;
- the Purple Heart Trail Program that promotes remembrance of Soldiers wounded or killed in combat action;
- the First Responder Program that honors and recognizes law enforcement officer and firefighters killed in the line of duty; and
- the Junior Reserve Officers Training Corps/Reserve Officers' Training Corps/Youth Program that is focused on fostering patriotism and good citizenship across the nation.

PARALYZED VETERANS OF AMERICA (PVA; www.pva.org), which is chartered by Congress, provides services and advocates for all Veterans with paralysis due to spinal cord injury or dysfunction. Veterans with diagnoses of multiple sclerosis, amyotrophic lateral sclerosis, and other diseases of the central nervous system are eligible for membership. PVA provides comprehensive programming in advocacy and legislative review at the state and national level including both Veteran and disability rights; research and education programs including clinical practice guidelines; sports and recreational activities (eg, the National Veterans Wheelchair Games); and assistance with government benefits, accessible design, and review of VA programs. PVA provides financial support for Operation Iraqi Freedom/Operation Enduring Freedom Soldiers or Veterans participating in the National Veterans Wheelchair Games for the first time. Sponsorship for other PVA organized sports and recreational events is also available on occasion.

AMERICAN LEGION (AL; www.legion.org), which is chartered by Congress, is a VSO founded to benefit all armed forces Veterans who served during a wartime period. AL, which is one of the largest VSOs, offers an expansive array of services to Veterans and the community. The AL is active in ensuring that Soldiers and Veterans receive the highest quality of medical rehabilitation available. Programs to accomplish this goal include the following:

- Legislative Action Center
- Benefits Center
- Heroes to Hometowns
- Homelessness
- My GI Bill
- Department Service Offices
- Veterans Career Center

The Heroes to Hometowns program is relevant to WTU leadership and Soldiers as a transition program for severely injured Soldiers returning home from Operation Iraqi Freedom/Operation Enduring Freedom. This program provides a support network and helps to coordinate hometown resources. Among the services provided are welcome-home celebrations, temporary financial assistance, pro-bono financial planning, housing assistance, home and vehicle modification assistance, government claims assistance, entertainment opportunities, and family support.

VETERANS OF FOREIGN WARS (VFW; www.vfw.org) advocates for the rights of members of the armed forces and Veterans who have served in an armed conflict. VFW, which is the largest organization of combat Veterans, is devoted to “honor the dead by helping the living.” VFW promotes goodwill, patriotism, and youth scholarship through programs for Veterans’ benefits, legislative advocacy, military assistance, community services, youth activities, and scholarship programs. Soldiers can benefit from the VFW assistance activities such as the Military Assistance Program, which helps with farewell and welcome-home gatherings; Operation Uplink, which provides free phone cards; and Unmet Needs, which assists with up to \$2,500 for service members and their Families in financial hardship.

WOUNDED WARRIOR PROJECT (WWP; www.woundedwarriorproject.org) has been very active in advocating and providing services and programming, and driving a legislative agenda for severely injured service members during their time between active duty and transition to Veterans in civilian life. WWP, a not-for-profit organization, has the mission to “honor and empower wounded Warriors” of the US armed forces. Some of the WWP programs include assistance with military and Veterans’ benefits, sports and recreational programs, and employment assistance. Other WWP programs focus on succeeding in higher education and vocational programs, coping skills for posttraumatic stress disorder (PTSD), and networking with other Veterans with similar experiences. WWP is active in providing sports, recreation, and socialization activities for Soldiers, especially while on active duty,

to improve their medical rehabilitation outcomes, continuation on active duty, and successful community reintegration as Veterans.

AMERICA'S ADOPT A SOLDIER (AAS; www.americasadoptsoldier.org) focuses on providing care packages to deployed Soldiers and assisting Warriors in transition. The most relevant program for the Soldier is the Wounded Warrior Path to Strength to provide hardware, software, and Internet access and training for connecting to Family, military units, case workers, Army Knowledge Online, and the Microsoft On-Line Academy. This enables Soldiers to complete the on-line modules to earn Microsoft certificates. This program helps Soldiers to continue their training, stay connected to family and Friends, and maintain their social and professional networks.

ARMY EMERGENCY RELIEF (AER; www.aerhq.org) provides financial loans and grants to assist Soldiers and their Families for verifiable emergency situations including travel expenses, loss of income, medical or dental expenses, and similar unexpected costs. AER is a nonprofit organization that is separate from but works closely with the US Army to provide support for Soldiers during difficult financial situations. AER's sole mission is to collect, hold, and distribute funds to help relieve the financial stress of Soldiers and their Families.

ASSOCIATION OF THE UNITED STATES ARMY (AUSA; www.ausa.org) is an educational and advocacy organization that supports members of the US Army, National Guard, and Reserve, as well as Army civilians, retirees, Veterans, and Families. AUSA is structured in chapters throughout the United States and in some countries where Soldiers are stationed. AUSA organizes educational and networking symposia, and produces historical and teaching materials. AUSA works to ensure that everyone associated with the Army has a voice in issues that affect them.

UNITED SERVICE ORGANIZATION (USO; www.uso.org) is focused on providing morale, welfare, and recreational services to Soldiers through its nearly 120 USO centers around the world. USO has far-reaching programs from "down range" to the "home base" to make Soldiers' lives easier and to bring a bit of home to difficult and hazardous environments. USO also helps Families to cope while their Soldiers are deployed. USO supports programs that benefit Soldiers, including one of the most visible programs, the Wounded Warrior Support Centers, which are located on military bases with substantial WTU populations. Soldiers are also provided opportunities to attend first-class entertainment events with their Families organized or supported by



SERGEANT RORY A. COOPER (left) is shown participating in 5,000-meter race of the US Army Europe track and field championships in 1979, and (below) Dr. Cooper is shown competing in the National Veterans Wheelchair Games. Returning to activities that a Soldier enjoys are an important part of the medical rehabilitation process to build strength, stamina, confidence, and self-worth. Sports and running were an important part

of Dr. Cooper's life as a Soldier. They remained important after his spinal cord injury as a Veteran and helped to give him the confidence and strength to adapt to his disabilities and earn a bachelor's, master's, and eventually a doctoral degree leading to a successful career as an academic professor and VA Career Scientist.



USO. USO also supports sporting and recreational activities such as the Warrior Games and the Ride-to-Recovery.

OTHER PROGRAMS

Other important programs fall outside the classification as either a VSO or MSO, but also provide programs or services that may be important to Soldiers and their Families.

AIR COMPASSION FOR VETERANS (ACV; www.aircompassionforveterans.org) provides free medically related air travel to medical treatment facilities for members of the wounded members of the armed services, Veterans with disabilities, and their Families. The air travel is targeted at helping Soldiers and Veterans access specialized medical evaluation, treatment, diagnosis, or rehabilitation close to home or where there are unique services. Soldiers and Veterans are eligible for the services of ACV as long as they need them. Flights can be arranged as quickly as 24 hours after being approved.

AMERICAN RED CROSS (ARC; www.redcross.org) has a 100+ year history of assisting Soldiers and their Families. ARC, which can help to relay emergency messages, provides support groups for Families and organizes programs to help Americans show their support. ARC helps Soldiers to remain connected to their Families in crisis situations wherever the Soldier may be posted. ARC provides financial assistance to Soldiers, military dependents, retirees, and widows of retirees, and works closely with the AER for situations such as emergency travel, burial of loved ones, and prevention of privation. ARC provides casualty assistance travel for up to two members of the immediate family to attend the memorial or funeral service of a Soldier killed on active duty in a combat zone or to visit a hospitalized wounded Soldier. ARC, which is well versed in the services provided by various organizations and government agencies, provides information and referral services. ARC also provides thousands of volunteers in VA medical centers. ARC also helps with transportation to treatment appointments and provides funds for activities for Veterans to meet their basic material needs. ARC also helps Veterans file claims for benefits from the VA.

HELMETS TO HARDHATS (HTH; helmetstohardhats.org) helps Veterans to develop the information, skills, and networking to find satisfying and maintain gainful employment in the building and construction trades. HTH is a construction industry initiative that provides training, apprenticeships, and

career opportunities for Veterans. HTH programs are open to Veterans of the Army, National Guard, and Army Reserve. Soldiers may enter the program as they are transitioning out of the military.

HOMES FOR OUR TROOPS (HFOT; www.homesforourtroops.org) provides specially designed and adapted housing for severely wounded Soldiers and Veterans who served in Operation Iraqi Freedom/Operation Enduring Freedom anywhere in the United States at no charge to them. HFOT, which is a not-for-profit organization, may provide or remodel a home for a severely wounded Soldier or Veteran. HFOT works with volunteers throughout the United States to build a home for Soldiers and Veterans in need that meets their individual needs.

SALVATION ARMY (SA; www.salvationarmyusa.org) provides emergency relief for Soldiers and Veterans, assists homeless Veterans, and provides comfort to Soldiers, Veterans, and their Families. SA helps organize holiday parties for the children and Families of Soldiers, provides welcome-home and deployment events, and provides items to comfort deployed Soldiers.

WALL STREET WARFIGHTERS (WSW; www.wallstreetwarfighters.org) is a not-for-profit foundation that partners severely injured Soldiers and Veterans with mentors, and provides them training to pursue successful finance careers. WSW provides vocational assessment, training support, and job placement. WSW seeks industry leaders and senior managers in the finance industry to work with severely injured Soldiers and Veterans to help them meet their career goals. Long-term goals are to help Veterans with severe disabilities to achieve financial security, professional satisfaction, and personal independence.

ORGANIZATIONS THAT FOCUS ON SPORTS AND RECREATIONAL OPPORTUNITIES

Among the many organizations that support Soldiers and Veterans with disabilities, there is a unique group that focuses on sports and recreational opportunities to enhance medical rehabilitation and community reintegration. A few of the more prominent programs that are relevant to Soldiers will be presented in this chapter. Unfortunately, for Soldiers and Veterans with disabilities many physical and psychological barriers to exercise exist, including the following: time, cost, motivation (same barriers experienced by Soldiers/Veterans without disabilities); availability of programs; availability of adaptive equipment; transportation; accessibility; functional limitations (physical

limitations, cardio-respiratory system); and psychological limitations (eg, depression). These organizations work to overcome these barriers.

ACHILLES INTERNATIONAL (ATC; [www.http://achillesinternational.org/](http://achillesinternational.org/)), formerly known as Achilles Track Club, is a not-for-profit organization that provides community support for athletes with disabilities and has members in more than 70 countries. ATC's goal is to enable athletes with disabilities to participate in mainstream athletics, and it has developed specialized programs for children and Veterans returning from Iraq and Afghanistan. The Freedom Team of Wounded Veterans supports running programs and provides marathon opportunities for disabled Veterans.

CHALLENGED ATHLETES FUND (CAF; www.challengedathletes.org), which is a not-for-profit charitable organization, provides grants to athletes with disabilities. CAF promotes involvement in athletic endeavors for people with disabilities and helps them discover or rediscover the athlete within themselves. CAF promotes increasing physical activity among people with disabilities by providing grants for adaptive sports, recreation, and exercise equipment. CAF fills an important need because lack of access to adaptive equipment is a significant barrier to participation in sports and exercise for people with disabilities (although the VA provides adaptive sports equipment for eligible Veterans through the Prosthetics and Sensory Aids Service). A grant from CAF can be used to purchase those items that cannot be provided by the VA Prosthetics and Sensory Aids Service.

DISABLED SPORTS USA (DSUSA; www.dsusa.org), which was founded by Vietnam Veterans with disabilities, provides opportunities for individuals with disabilities to rebuild their lives through sports and recreational activities. DSUSA, a not-for-profit organization, provides a wide range of adaptive sports and recreational programs across the United States. DSUSA is organized into regional chapters that provide local programming. DSUSA has partnered with the WWP to provide the Wounded Warrior Disabled Sports Project (WWDSP). WWDSP provides early intervention with active sports during the medical rehabilitation process to promote higher achievement among severely injured global war on terror Soldiers and Veterans. WWDSP's long-term goal is for participants to attain higher levels of function, resilience, community participation, and employment. Through the WWDSP, Soldiers and their Families are provided transportation, lodging, adaptive equipment, and individualized instruction in winter and summer sports. Veterans are also introduced to programs within their local communities to maintain healthy sports and recreational activities.

US PARALYMPICS MILITARY SPORTS PROGRAMS (USPMSP; www.usparalympics.org) is a component of the US Paralympics, a division of the United States Olympic Committee. The Paralympics, affiliated with the Olympic games, offers the ultimate adaptive sports competition. The Paralympic movement has had a positive impact on the perception of society regarding people with disabilities.⁸ USPMSP partners with the DoD and VA to provide local sports and recreational opportunities, and also offers programs at many of the WTUs. USPMSP advocates for adaptive sports as therapy for the troops and helps achieve their maximum physical and mental potential. USPMSP helps organize and operate the Warrior Games.

SUMMARY

Many of the organizations briefly described within this chapter have outreach coordinators located in proximity to WTUs or in their regions. Often it requires working with multiple organizations to meet all of the needs of wounded, injured, or ill Soldiers. The programs and services that organizations provide may change from time to time; therefore, it is important to review their Web sites periodically to attain current information.

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ARMY VETERANS LIKE DR. RORY A. COOPER have redefined what it means to have a disability from spinal cord injury. His life exemplifies that using a wheelchair does not need to limit one's potential for success. Running, building relationships, and being a leader were a big part of Cooper's life when he was a Soldier. He competed in numerous track and cross-country events while serving with the US Army Europe (USAREUR) in Germany. Included among his accomplishments, then-

Sergeant Cooper earned bronze medals in the USAREUR cross-country championships, and for the 5,000-meter and 10,000-meter in the USAREUR track and field championships. He also represented the Army in many other long-distance races including marathons. Although initially trained as an



armor and M60 gunner, he was later selected to become part of a small team of Soldiers retrained as KONTAKT coordinators and linguists to help build German–American relations and create cultural bridges to support the mission to quell terrorist activities directed toward Americans in Europe. He worked on the staff of Major General C.E. McKnight, Commanding General of the 5th Signal Command, and later became responsible for KONTAKT activities for both the Army and the Air Force for the areas of responsibility of the 5th Signal Command and 21st Support Command within Germany. Due to unfortunate circumstances, Cooper received extensive injuries, the most severe of which was a thoracic spinal cord injury, when he was struck by a large transport truck while training on his bicycle in 1980. Armed with his experiences in the Army and his training as a noncommissioned officer, Cooper did not let this deter him from pursuing his goals.

After extensive medical treatment and intensive medical rehabilitation, Cooper enrolled at California Polytechnic State University (Cal Poly) with the help of his Department of Veterans Affairs (VA) benefits. In 1985, he received a bachelor's degree in electrical engineering, was elected to several academic honor societies, and earned a number of accolades for his engineering and academic abilities. He started working for Pacific Gas & Electric as an engineer at the Diablo Canyon Nuclear Power Plant while continuing his studies part-time, earning a master's in engineering at Cal Poly in 1986. He then decided to change his career path and pursue his passion for creating technology for people with disabilities. Cooper enrolled in the doctoral program in electrical and computer engineering at the University of California at Santa Barbara. He graduated in 1989 with a concentration in biomedical engineering, and then accepted a faculty position in biomedical engineering at California State University in Sacramento. He quickly rose through the ranks and was promoted to associate professor with tenure. In 1994, he joined the University of Pittsburgh to help establish the new Department of Rehabilitation Science and Technology, the first of its kind in the United States, and in 1997 he was appointed chair of the department. At the same time, he founded the Human Engineering Research Laboratories within the VA, which became a VA Rehabilitation Research and Development Center of Excellence in 1999. In 2004, Cooper was appointed the first Distinguished Professor and FISA Foundation–Paralyzed Veterans of America endowed

Chair. He has become one of the world's leading authorities in medical rehabilitation research and rehabilitation engineering. One of his proudest contributions is being co-editor of *Care of the Combat Amputee*, a volume in the series, Textbooks of Military Medicine, published by the Borden Institute, Office of The Surgeon General, US Army. In 2010, Lieutenant General Eric B. Schoomaker inducted Cooper into the Order of Military Medical Merit.

Cooper did not give up on his athletic dreams either. Once discharged from medical rehabilitation, he began training by pushing a mile in his 80-pound hospital style chair. Soldiers in Cooper's unit organized a "fun run" and raised money to buy him his first sports chair. This opened the doors to wheelchair sports. Cooper responded to a flier placed on a Cal Poly bulletin board to create a wheelchair basketball team. He and Tim Davis, a Marine Corps Veteran who sacrificed his legs in Vietnam, were the first two members. Cooper's passion remained running, and he completed his first wheelchair marathon in 1983 along with Davis. In 1983, Davis introduced Cooper to the National Veterans Wheelchair Games (NVWG). Competing with other Veterans in the NVWG was like a homecoming for Cooper, and it made him feel like he had his life back. Cooper has competed in the NVWG ever since, and chaired local organizing committees in 1998 and 2011. Having tasted competition again, Cooper wanted more and competed in many national and international championships in wheelchair racing. His athletic achievements culminated with a world championship and world record at 10,000 meters in 1987 and a bronze medal in the Paralympic Games in 1988. Cooper continues to use his athletic knowledge and talents to help newly injured Soldiers and Veterans to compete at such events as the Army 10-miler, Marine Corps Marathon, Air Force Marathon, and the NVWG. Cooper was also a volunteer member of the US Paralympic staff in 1992, 1996, and 2008.

Throughout his career, Cooper has been wholeheartedly supported by his loving wife Rosemarie, whom he met when she was a young woman serving as an apprentice in hotel and restaurant management in Germany and he was a Soldier. Despite the travails of adapting to life-changing injuries, facing erroneous societal perceptions, and environmental barriers, both Dr. and Mrs. Cooper are leading successful and fulfilling professional and personal lives together as they approach 30 years of marriage. Mrs. Cooper completed her





master's degree in physical therapy in 1998, and the couple works together at the University of Pittsburgh, where she is an assistant professor and director of the Center for Assistive Technology. The Coopers have dedicated their adult lives to helping people with disabilities, especially Veterans and their Families, and work closely with the Army and VA to assist wounded, injured, and ill Soldiers and Veterans. They frequently contribute to activities at the Walter Reed National Military Medical Center, various Warrior in Transition Units, and other medical treatment facilities.

*Quality of life is the perception by individuals
of their position in life, in the context of the culture and value
systems in which they live and in relation to their goals,
expectations, standards and concerns.*



WORLD HEALTH ORGANIZATION

CHAPTER TWELVE

Overview of State and Federal Programs and Agencies for Wounded, Injured, and Ill Soldiers

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INTRODUCTION

Programs and agencies for wounded, injured, and ill Soldiers have many similarities in that they support overall transition needs, whether the goal is a return to service or civilian life and ultimately employment when feasible. The US Departments of Veterans Affairs (VA), Defense (DoD), Labor (DOL), Health and Human Services (DHHS), and Homeland Security (DHS), as well as the Social Security Administration (SSA) all feature programs that support wounded, injured, and ill Soldiers.

The Office of Personnel Management (OPM) is responsible for administering Veterans' preference laws (DOL investigates complaints of Veterans' preference violations). OPM is also responsible for overseeing the new initiative to bring more Veterans into federal jobs.¹

Some programs were formed collaboratively among multiple federal organizations to optimize resources. One such program (although not specifically designed for wounded, injured, and ill Soldiers), the Transition Assistance Program (TAP), was formed collaboratively by DoD, VA, the Department of Transportation, and DOL's Veterans' Employment and Training Service (VETS) to provide transition assistance including employment and training information to armed forces members within 1 year of separation or 2 years of retirement.² TAP was established to meet the needs of separating service members during their transition into civilian life by offering job search assistance and related services.³ A helpful handbook from the TAP employment workshop series includes resources for interviewing and other job preparation skills.⁴

TAP is a five-part program administered by DoD and the military services along with DOL, VA, and DHS. Preseparation counseling, which is provided by the respective military service, is mandatory for all separating service members. It is the only component that is mandatory. The employment workshop is conducted by DOL, its state partners, and contractors, and is conducted both stateside and overseas. The employment workshops are typically 2 and a half or 3 days. VA conducts Veterans' benefits counseling, which is typically a 4-hour briefing and usually follows the employment workshop.

VA also conducts the Disabled Transition Assistance Program (DTAP), a 2-hour add-on to Veterans' benefits counseling that focuses on vocational rehabilitation and compensation benefits. One-on-one transition counseling is available at the transition services office as a follow-on for those who want more personalized assistance. DTAP provides service members who have or believe they have a service-connected disability with specialized information and how to apply for the VA's Vocational Rehabilitation Program. It is usually presented in conjunction with the aforementioned 3-day TAP employment workshop. If DTAP seminars are not available at a Soldier's home facility, the Transition Office or Family Center staff will refer them to other sources where similar information is available.⁵

The National Resource Directory (NRD), a joint effort of DoD, VA, and DOL, is a comprehensive free Web resource that compiles information from various federal and state agencies, along with not-for-profit organizations, for service members, Veterans and their Families, as well as those who care

for them.⁶ The directory houses a wide variety of information on benefits and compensation, education and training, employment, family and caregiver support, health, homeless assistance, housing, transportation, and travel. Appropriate corresponding contact information for each resource is located in the directory.⁶ Widgets can be custom designed to provide specific state resource and benefits information that, when posted on an organization's Web site, can provide access to NRD content. Resources posted on the NRD are verified to ensure accuracy and to ensure the provider meets the participation standards.

US DEPARTMENT OF VETERANS AFFAIRS

VA has several major initiatives for wounded, injured, or ill Soldiers including the comprehensive Vocational Rehabilitation and Employment Vet-Success Program. Each Veteran who is eligible for and receives vocational rehabilitation and employment services may work with a rehabilitation counselor to establish a rehabilitation plan to help him or her with either reemployment (with a former employer), direct job placement services for new employment, self-employment, or employment through long-term services including on-the-job training, college, and other training, or independent living services. This is commonly referred to as the "5 Track," which was conceived by the VA Vocational Rehabilitation and Employment Task Force that submitted its report to the VA Secretary in March 2004, and allows disabled Veterans to make an informed choice.⁷

Under the VetSuccess umbrella, VA aims to assist Veterans through the chapter 31 Vocational Rehabilitation and Employment (VR&E) program. An important part of this initiative, called Coming Home to Work, serves as the VA's early intervention and outreach effort that benefits Veterans and service members alike. The Coming Home to Work program provides a transition into chapter 31, assistance with finding and maintaining suitable employment that will not exacerbate a person's disability-related condition, access to training programs including degree and certification programs, career exploration that may include a non-paid work experience, and collaboration with a medical rehabilitation team to ensure that medical appointments come first.⁸ VetSuccess also hosts a job search tool that has three mechanisms to search for employment. The user can customize searches by creating an account, utilizing a keyword search, or browsing one of several other job databases from the site.

Another significant program facilitated by the VA is the GI Bill. Through

the GI Bill Web site, service members and Veterans can review eligibility requirements, apply for benefits, search for potential schools, and use an online benefits calculator to determine which education benefit best fits their situation. To be eligible for 100% of the benefit, an individual must have served an aggregate of 36 months of active duty service, or have been discharged for a service-connected disability after 30 days of continuous service. Depending on an individual's situation, benefits may include payment of tuition and fees, a monthly housing allowance, and a stipend for books and supplies. The Post-9/11 GI Bill also allows service members to transfer unused education benefits to a spouse or to children. Approved training under the Post-9/11 GI Bill includes graduate and undergraduate degrees. All training programs must be offered by a degree-granting institution of higher learning approved for VA benefits. The period of eligibility for the Post-9/11 GI Bill generally ends 15 years from the date of the last discharge or release from the last period of qualifying service.⁹ Under the Montgomery GI Bill, active duty members enroll and pay \$100 per month for 12 months, and are then entitled to receive a monthly education benefit once they have completed a minimum service obligation. Under Selected Reserve, a reservist must be actively drilling and have a 6-year obligation to be eligible. In general, benefits are payable for 10 years following release from active duty.⁹ Most universities usually have a military educational benefits administrator, if not a comprehensive Veterans' service office that is also open to service members. College preadmissions counselors can direct Veterans to the school certifying official on campus. The certifying official is responsible for completing all paperwork necessary to certify enrollment for students eligible for VA benefits so benefits may be paid.

VetSuccess recently expanded through a new pilot program specifically housed on college campuses across the country to help ease Veterans' transition to college life. The pilot program is designed to ensure Veterans' health, educational, and benefits needs are met as they transition from active duty military to college life. VA vocational rehabilitation counselors and outreach coordinators from VA's Vet Centers are assigned to campuses to provide vocational testing, career and academic counseling, and readjustment counseling services to ensure Veterans receive the support and assistance needed to successfully pursue their educational and employment goals. Peer-to-peer counseling and referral services are also available to help resolve any problems that could potentially interfere with a Veteran's educational program, including referrals for more intensive health services through VA medical centers, community-based outpatient clinics, or Vet centers, as needed.¹⁰

The Federal Recovery Coordination Program, a joint program of DoD and VA, is designed to cut across bureaucratic lines and reach into the private sector as necessary to identify services needed for seriously wounded and ill service members, Veterans, and their Families.¹¹ Individuals needing these services are generally referred from case managers, but they can also self-refer for an evaluation. Program personnel are assigned to the most severely wounded, injured, or ill Soldiers.

Through the VA Healthcare System, wounded, injured, or ill Veterans receive a comprehensive medical benefits package. New locations continue to be added to the VA healthcare system, bringing the total number of treatment sites to more than 1,400 nationwide. To determine eligibility, Veterans should visit the VA healthcare portals to help them select their primary VA healthcare facility or community-based outpatient clinic. In addition to primary care, the VA has several specialized services available including readjustment counseling and substance abuse counseling. Normally a Veteran must establish the existence of a service-connected disability to be treated for it. Currently, Veterans are eligible to receive medical treatment for any medical condition for up to 5 years postdischarge without establishing such a claim.

The VA Prosthetic and Sensory Aids Service is one of the largest and most comprehensive providers of prosthetic devices and sensory aids in the world.¹² Although the term “prosthetic device” may suggest images of artificial limbs, it actually refers to any device that supports or replaces a body part or function. This service provides a full range of equipment and services to Veterans including those that improve accessibility, such as ramps and vehicle modifications; devices that are surgically implanted in the Veteran, such as hips and pacemakers; and artificial limbs or hearing aids.¹² To best serve Veterans who use prosthetic appliances, sensory aids, medical equipment, and medical supplies, this service uses an interdisciplinary team comprising prosthetic representatives, prosthetic purchasing agents, prosthetists, orthotists, care and treatment coordinators, visual impairment service teams’ coordinators, blind rehabilitation specialists, physicians/surgeons, nurses, therapists, podiatrists, and optometrists/ophthalmologists.¹²

US DEPARTMENT OF DEFENSE

One of DoD’s programs is the Army Wounded Warrior Program (AW2), which supports eligible wounded, injured, or ill Soldiers for as long as it takes to transition back to active duty or civilian life. The AW2 Web site should be regularly reviewed for eligibility and programs. All participants who

are expected to require 6 months of rehabilitative care and need complex medical management may be assigned to a Warrior Transition Unit to focus on healing before continuing on active duty or transitioning to Veteran status to become productive members of their communities.¹³ Those who meet AW2 eligibility are simultaneously assigned to the AW2 and receive a local AW2 advocate to personally assist them long term. In addition to other transition activities, wounded, injured, or ill Soldiers are encouraged to complete a professional internship experience while still actively participating in the WTU to gain practical skills and assist in transition after they separate from it.

The Warrior Games, which is a joint effort between DoD and the US Olympic Committee, serves as a focal event to empower wounded, injured, or ill Soldiers to test their abilities, challenge preconceived notions, and incorporate competitive athletics into military wounded Warrior programs. The games are also an introduction to Paralympic sports for injured service members by inspiring recovery and physical fitness, and promoting new opportunities for growth and achievement.¹⁴ Wounded, injured, or ill service members with these physical disabilities can compete: amputations, spinal cord injuries, posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), limb salvage, or stroke. Although each branch of the military selects athletes on an invitation-only basis, interested participants may contact the individuals listed on the official Warrior Games Web site for more information on selection.¹⁴

DoD administers a cadre of recovery care coordinators (RCCs) whose primary responsibility is the oversight and assistance for the family care management of the recovering service member (RSM), throughout the continuum of care from recovery through rehabilitation to reintegration, either continuing on active duty or returning to civilian life as a Veteran. The primary tool used for coordinating the RSM/family care is the Comprehensive Recovery Plan (CRP)/Comprehensive Transition Plan (CTP). RCCs work with military medical case managers and nonmedical care managers involved with the RSM/family for the development and execution of the CRP/CTP. These coordinators are responsible to do the following:

- ensure the development, implementation, and oversight of the CRP/CTP;
- consult and collaborate with multidisciplinary teams during the initial treatment phase and continue throughout the continuum of care;
- oversee, coordinate, and monitor the medical and nonmedical services across the continuum of care as documented in the CRP/CTP;
- facilitate an efficient, effective, and smooth rehabilitation and transition back to active duty or civilian life as a Veteran through coordination with

- appropriate personnel (military service coordinators/VA liaisons); and
- collect, maintain, and analyze data for planning and reporting purposes in accordance with governing program guidance.¹⁵

DoD also sponsors Operation Warfighter (OWF), an employment program often referred to as an internship program for wounded, ill, and injured service members who are undergoing rehabilitation at certain military treatment facilities across the United States.¹⁶ OWF is designed to provide recuperating service members with meaningful activity outside of the military treatment facility environment that assists in their wellness, offers a formal means of transition back to the civilian workforce, and provides meaningful civilian career experience. OWF, which often provides the first real civilian work experience for many, is available only through federal employers; private sector employers are not eligible to participate.

A full-time employment program is “Always a Soldier,” which is run by the Army Materiel Command (AMC). It provides Veterans with opportunities for career advancement, job mobility, family well-being, and greater financial security. Veterans who can no longer serve in uniform can continue as an employee in the AMC. The “Always a Soldier” representatives work diligently to locate an employment opportunity that will be suitable for both the Veteran and AMC, which allows for a rewarding experience based on qualifications and acquired skills.

DoD also administers the Computer/Electronic Accommodations Program (CAP), the federal government’s centrally funded program to provide assistive technology and related services—free of charge—for civilian employees of DoD and 66 other federal agencies with visual, hearing, dexterity, and cognitive disabilities.¹⁷ In 2004, CAP established a military program—CAP’s Wounded Service Members Initiative—for wounded, injured, or ill Soldiers who need electronic assistive devices to enhance their rehabilitation. Unlike CAP services for federal employees with certain disabilities who must return their assistive devices upon termination from federal employment, Soldiers may retain any accommodations provided by CAP even upon their separation from active duty. In many cases, this results in Soldiers bringing their employment accommodation with them.

DoD also offers several other specialized programs for individuals in need of specialized support for education, including the DANTES (Defense Activity for Non-Traditional Education Support) program, which offers counseling assistance that can directly benefit not only those wounded, injured, or ill Soldiers with cognitive impairments, but also service members overall.¹⁸ Although not specific to the needs of Soldiers, MilitaryOneSource.com also serves as a one-stop shop for military benefits and programs.¹⁹

US SOCIAL SECURITY ADMINISTRATION

Military service members can receive expedited processing of disability claims from SSA. Benefits available through SSA are different than those from the VA and require a separate application.²⁰ However, eligibility for one is not a factor for the other, and different criteria are used to determine eligibility. SSA has developed a guidebook to assist in this process that details the mechanisms service members benefit from, including the Social Security disability insurance (SSDI) program, which pays benefits to eligible wounded, injured, or ill service members and Families.²¹ Eligibility is determined by the amount of time worked and Social Security taxes paid. The Supplemental Security Income (SSI) program pays benefits based on financial need.²¹ Although typically persons are ineligible to receive SSA benefits if they continue to work, active duty status and receipt of military pay does not—in itself—prevent payment of either type of disability benefits, SSDI or SSI (SSI benefits are based on economic need, so active duty pay may make an active duty Soldier ineligible). After applying for disability benefits, SSA will evaluate service members' work activity to determine benefit eligibility.²¹ The amount of work activity is the controlling factor of whether SSA benefits are received as opposed to the amount of pay or military duty status. Service members may apply for disability benefits at any time before or after discharge, whether they are hospitalized, in a rehabilitation program, or undergoing outpatient treatment in a military or civilian medical facility.²¹ Applicants may apply online, in person, or by telephone, and may make an appointment at any local SSA office. A “disability starter kit” is available to assist wounded, injured, or ill service members with their application.

US DEPARTMENT OF LABOR

DOL supports wounded, injured, or ill service members and Veterans through the VETS. The Disabled Veterans' Outreach Program (DVOP) and the Local Veterans' Employment Representatives (LVERs) program are two initiatives established by VETS.²² DVOP specialists provide community and employer support to Veterans, especially those with service-connected disabilities. Specifically, DVOP specialists are state employees who serve as case managers for Veterans to ensure they receive appropriate employment and training opportunities by partnering with federally funded job training programs. They also communicate and work with Veterans' service organizations, VA, and DoD to facilitate Veterans' linkage with the appropriate employment opportunities. LVERs are state employees who contact local employers to

develop job opportunities for Veterans. Both DVOP specialists and sometimes LVERs work at VA (VR&E) sites to offer labor market information to ensure disabled Veterans are being trained for local jobs. LVERs also ensure that Veterans receive all the services provided by state employment offices including counseling, testing, and the identification of training and employment opportunities.

REALifelines (Recovery and Employment Assistance Lifelines), which was established in 2004, is sponsored by DOL, military medical transition centers, and career workforce agencies located in hometowns across the country.²³ The program, which provides one-on-one assistance to wounded, injured, or ill Soldiers, supports the economic recovery and reemployment of transitioning service members and their families by identifying and addressing barriers to employment or reemployment. The program links service members with local professionals in their hometowns to support their economic recovery and reemployment through a range of services. As part of the program, wounded, injured, or ill service members and their spouses are eligible for services offered at more than 3,500 One-Stop career centers nationwide.²³

America's Heroes at Work, an important focus of the President's Veterans agenda, is a DOL initiative that addresses the employment challenges of returning service members living with TBI and/or PTSD.²⁴ The project equips employers and the workforce development system with the tools to help returning service members affected by TBI and/or PTSD to succeed in the workplace. America's Heroes at Work is managed jointly by DOL's Office of Disability Employment Policy and VETS, in collaboration with other federal agencies engaged in Veterans' transition issues, including the DoD, VA, DHHS, DHS, Department of Education, the Small Business Administration, and others.

The Job Accommodation Network (JAN), funded by DOL's Office of Disability Employment Policy, is the leading source of free, expert, and confidential guidance on workplace accommodations and disability employment issues.²⁵ Although not specific to wounded, injured, or ill service members, JAN helps people with disabilities enhance their employability and shows employers how to capitalize on the value and talent that people with disabilities add to the workplace. Consultants offer one-on-one guidance on workplace accommodations, the Americans with Disabilities Act and related legislation, and self-employment and entrepreneurship options for people with disabilities. JAN's consultants can be reached online or over the phone.

US DEPARTMENT OF HOMELAND SECURITY

DHS' Wounded Warrior Program recruits and hires severely wounded Veterans. Although the program does not guarantee a job, DHS provides Veterans the opportunity to interview for available positions without undergoing the standard competitive employment process.²⁶ If selected, DHS makes every effort to place the Veterans in locations of their choice, often close to their Families and support systems. DHS recruits nationally at career fairs and partners with organizations such as AW2 and VA's VR&E program. DHS has been one of the lead agencies in participating in OWF. Although DHS is committed to assisting all severely wounded Veterans, recruiting is focused on the following people to maintain consistency with other federal wounded Warrior programs:

- those who incurred injuries or illness in the line of duty after September 10, 2001; and
- those who receive or expect to receive a DoD or VA disability rating of 30% or greater in categories such as loss of limb, loss of vision/blindness, spinal cord/paralysis, permanent disfigurement, loss of hearing/deafness, severe burns, TBI, PTSD, and any other condition requiring extensive hospitalization or multiple surgeries; or
- those who receive a DoD or VA combined rating equal to or greater than 50% for any other combat or combat-related condition.

OFFICE OF PERSONNEL MANAGEMENT

OPM has several areas of responsibility in the employment of Veterans with and without disabilities. OPM is required to review affirmative action plans developed by federal agencies every year. OPM also compiles a report under the Veterans Employment Initiative, Executive Order 13518, showing data on the hiring of Veterans and disabled Veterans into the federal government for the 24 federal executive order agencies.²⁷

OPM oversees basic Veterans' preference, although the DOL has the statutory responsibility to investigate all complaints of Veterans' preference violations. In addition to Veterans' preference, several noncompetitive hiring authorities are aimed at hiring Veterans into federal jobs for which they are qualified. The Veterans Recruitment Appointments Authority (38 USC §4214; 5 CFR, Part 307) is designed to allow certain eligible Veterans to enter federal employment without competing with other applicants. Its use is discretionary among the federal agencies. Eligible Veterans may be appointed

to civil service grades up to GS-11 or their equivalent. Disabled Veterans who have a 30% or more disability rated by the military or VA (5 USC §3112; 5 CFR 316.302; 5 CFR 316.402; 5 CFR 315.707) may be appointed to a position up to and including GS-15 or equivalent. Earlier in this chapter, VA's VR&E program was presented. An additional benefit of completing an education program through VR&E is that the Veteran may be appointed for federal employment without competition into an occupation for which he or she was trained (38 USC, Chapter 31; 5 CFR §315.604).

The Veterans' Employment Opportunity Act (VEOA)—5USC §213.3202(n); §335.106—was enacted in part to allow certain Veterans to be considered as “status” employees so they can apply and compete for positions announced under merit promotion procedures when the hiring agency recruits from outside its own workforce. If Veterans compete under the merit promotion procedures and are selected, they are given a career or career-conditional appointment. Veterans' preference does not apply in VEOA appointments. To be eligible for a VEOA appointment, a Veteran must be:

- preference eligible (see section below on preference eligibility); or
- separated after 3 or more years of continuous service performed under honorable conditions. If a service member was released short of completing 3 years of continuous active duty, his or her military service has met the length-of-service requirement for VEOA.

When applying for a position under the VEOA authority, the Veteran must provide—in addition to the required application materials as stated in the vacancy announcement as proof of eligibility—their DD-214 for the period of service for which they are claiming eligibility.²⁸

On November 9, 2009, President Barack Obama signed Executive Order 13518, designed to increase the number of Veterans employed by the federal government. Called the “Employment of Veterans in the Federal Government,” it established a council on Veterans' employment cochaired by the Secretaries of the VA and DOL. It also required each agency to “establish a Veterans Employment Program Office, or designate an agency officer or employee with full-time responsibility for its Veterans Employment Program, to be responsible for enhancing employment opportunities for Veterans within the agency, consistent with law and merit system principles, including developing and implementing the agency's Operational Plan, Veterans' recruitment programs, and training programs for Veterans with disabilities, and for coordinating employment counseling to help match the career aspirations of Veterans to the needs of the agency.”²⁹

CONCLUSION

In summary, many federal agencies provide programs that provide successful transition support for service members and their families. Electronic brochures exist for the majority of the programs; the reference list and corresponding Web sites below provide programmatic benefits and appropriate contacts.

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AFTER LOSING A LEG AS A RESULT OF COMBAT IN VIETNAM, RON DRACH left the US Army in 1967 with a Purple Heart and questions about his future. He had no real work experience and a high school education. Things changed. Less than a year after his wounds, Drach went to work for the Department of Veterans Affairs VA in Pittsburgh as a receptionist, and that started a more than 40-year career of helping Veterans.

Following 2 and a half years with the VA, he joined the professional staff of the Disabled American Veterans (DAV) in 1970. Beginning in the DAV's Pittsburgh office, Drach rapidly rose to become the organization's National Employment Director in 1975. He was the first Vietnam Veteran to be appointed as a director among DAV's ranks. In this post, he established a reputation as one of the nation's foremost authorities on employment issues affecting Veterans and others whose lives have been affected by disabilities.

Drach's responsibilities led him to provide significant input into America's response to the needs of Veterans affected by posttraumatic stress disorder, homelessness, and other socioeconomic issues. He became a leading voice on these issues. Many times throughout his career, Drach has appeared before congressional committees, offering expertise and recommendations for legislative change.

After leaving the DAV, Drach worked for the Department of Labor's (DOL's) Veterans' Employment and Training Service (VETS) as its Director of Government and Legislative Affairs. He worked with congressional staff, the Office of the Solicitor, and others within the DOL on all legislative employment issues that affect it, the VA, and the Department of Defense (DoD).

Over the years, Drach served on many commissions established by the VA, DOL, congressional committees, and others involved in enhancing the lives of disabled Veterans and other people with disabilities. He was recently appointed to the DoD's Task Force for Care, Management, and Transition of Recovering Wounded, Ill, and Injured Members of the Armed Forces. He has also served on the governing boards of the President's Committee on Employment of People with Disabilities, the National Coalition of Homeless Veterans, and others. High-profile volunteer activity has included service as a Team Leader for the US Paralympics Sitting Volleyball Team, which competed in the International Paralympics competition in 2000 in Sydney, Australia. He is currently president of the board of directors for the Wounded Warrior Project, a member of the Advisory Council of ThanksUSA, and a member of the editorial board of GI Jobs.

*Having hope means that one will not give in to
overwhelming anxiety, a defeatist attitude, or depression
in the face of difficult challenges or setbacks.*

*Hope is more than the sunny view that everything
will turn out all right. It is believing you have the will and
the way to accomplish your goals.*



DANIEL GOLEMAN
EMOTIONAL INTELLIGENCE
1996

CHAPTER THIRTEEN

Summary

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Leading Soldiers is a tremendous responsibility, and there is no more important position than to aid wounded, injured, or ill Soldiers in making the fullest recovery possible. Every Soldier deserves the best care available and should be afforded every opportunity to achieve his or her physical, mental, Family, and career goals. Leaders must help their Soldiers along their path and provide them with the necessary tools and guidance to achieve their best. Sometimes that may require being tough and setting higher standards and expectations than the Soldier may think is possible for himself or herself, and at other times it requires listening and providing empathy and gentle support. At all times, it is important to remember that even though wounded, injured, or ill members of the Warrior Transition Unit (WTU) are Soldiers and may be impaired, they need to live by the core values of the Army.

Good leaders have strong networks. Being in a WTU is different than most leadership positions because a key component is interacting with medical

professionals and organizations that are focused on wounded, injured, or ill Soldiers. Many Warrior Transition Leaders (WTLs) are not initially familiar with these aspects of the Army. Representatives from veteran service organizations and military service organizations can be excellent sources of information and often provide important programming. Because of the nature of military leader rotations, volunteers and staff from these organizations along with the WTU civilian staff often provide some continuity and have important insight. The “triad of care” is an essential and fundamental formula for leaders and Soldiers within the WTU. Each member of the team—care manager, squad leader, and clinical care manager—brings a unique and important perspective and makes an essential contribution. Team members, who also have their networks to bring knowledge and resources to bear on issues facing the Soldier, need to meet regularly and know the Soldiers who are their responsibility. They need to know about the Soldiers’ Families, friends, likes and dislikes, and goals and aspirations. They are there to help Soldiers heal, learn to manage their own care, make adaptations to a new lifestyle and self-image, and help the Soldier succeed. The Soldier is responsible for being fully engaged in his or her care and therapy, and in working toward the goals set forth in the Comprehensive Transition Plan. The Comprehensive Transition Plan is a living document that must be updated as the Soldier achieves milestones or needs to redirect to reach his or her goals. Progress on the Comprehensive Transition Plan needs to be tracked and maintained, and readjusted if setbacks occur.

Every journey starts with the first step. Healing, recovering, and rebounding from wounds, injuries, or illnesses are much like the proverbial story of “How do you swallow an elephant?” and—of course—the answer is “one piece at a time.” The art of successfully recovering and adapting to a life-changing event is to have a strong support system and set small achievable goals that can be surmounted within a reasonable time and then successively build upon each other. This is a common approach, and all Soldiers have experienced it because this is exactly how the Army converts civilians into Soldiers: one small goal at a time that builds upon earlier achievements. For many WTU Soldiers their initial goals are related to healing: walk for the first time; take their wheelchair to the mess hall; grasp something with their prosthetic arm; or talk with their significant other. These goals can later be extended to such things as attending a ski trip and snow skiing again, completing the Army 10-miler, passing the physical fitness test, or taking their family on a weekend outing. From there they can pursue activities such as going to the range and requalifying on their weapon, completing a training course, beginning preparations for college, or participating in an internship. These activities build toward continuing on active duty in the same or different military occupation specialty or possibly separating from the Army and

transitioning to the Department of Veterans Affairs (VA) for further rehabilitation, community reintegration, and employment or long-term training (eg, attending and graduating from college).

Leaders need to instill confidence in their Soldiers and help them to achieve more than they imagine possible. It is a natural tendency for wounded, injured, or ill Soldiers to temporarily lose focus on their goals and experience moments of loss or even despair. Being severely wounded, injured, or ill is a life-disrupting and can be a life-altering event. With proper support, guidance, and resources to level the playing field, Soldiers can adapt and overcome. Some Soldiers accomplish more and have more fulfilling lives than they may otherwise have had without their traumatic experiences. Every Soldier deserves the chance to have a full, productive, and satisfying life. Sometimes that means showing them the way and helping them to push their own perceived limits.

Everyone has preconceived notions of disability or impairment. Many people think of someone who uses a wheelchair as frail and helpless, until they run in the Army 10-miler and see the wheelchair racers finish among the leaders, or attend the National Veterans Wheelchair Games and see wheelchair rugby players with broad grins smashing into each other and taunting each other with good-natured banter. Sacrificing a limb, becoming blind, or acquiring a spinal cord injury does not mean that life is over; it may mean that life's path has been altered. Numerous Soldiers and civilians have had a traumatic experience that has changed their lives physically, mentally, or emotionally, and they have gone on to lead healthy and happy lives, and a significant number have led extraordinary lives. Not all Soldiers need to follow the path of their predecessors like the Honorable Gordon Mansfield or F. Dawn Halfaker: being a good person, a loving spouse and/or parent, a solid friend, and a contributing member to society are important. While in the WTU, the leadership, the "triad of care," and every staff member must help each Soldier to adjust to the changes in his or her life and become the person that he or she wants to be.

Soldiers with disabilities tend to respond differently than people who have had a disability since birth. It is more common for Soldiers and Veterans to be more open about displaying their wounds or injuries. It has become common practice to wear short pants with prosthetic limbs or to have wheelchairs with the Army seal emblazoned on the backrest. Soldiers have every right to be proud of and recognized for the sacrifices they have made on behalf of freedom. Disability is the interaction of impairment (result of wound, injury, illness), the environment (location, building, community), and the society (people around them). It is impossible to get a true sense of what it is like to experience a disability without actually experiencing it. However,



COLONEL JAMES LARSEN (left and front), Warrior Transition Brigade commander (middle); Command Sergeant Major Jesus Febo-Colon; and Dr. Rory Cooper (back); Department of Rehabilitation Science and Technology professor at the University of Pittsburgh, navigate a wheelchair-accessible ramp outside of Abrams Hall at the Walter Reed Army Medical Center during an installation tour. The tour aimed to give Warrior

Transition Brigade leadership a better understanding of the obstacles faced by soldiers who use wheelchairs. Larsen wears a bandana over one eye to simulate an additional injury a wounded Warrior may face. *Photo by Kristen Ellis, Walter Reed Army Medical Center.*

one can develop an appreciation and sensitivity for the challenges faced by Soldiers with impairments due to wounds, injuries, or illnesses through observations and experiential learning. This learning can help leaders be proactive in addressing barriers their Soldiers may face. Removing physical barriers from the environment and attitudinal barriers from the staff can significantly empower wounded, injured, or ill Soldiers to achieve their maximal potential. With a knowledgeable facilitator—preferably someone with a disability—it can be a useful experience to review all of the facilities on post that are used or frequented by the WTU's Soldiers. The experience can be enhanced by personally using a wheelchair, brace, or a prosthetic limb (there are limbs made for people with their limbs to try) to traverse accessible routes and to develop maps that guide Soldiers on the safest and easiest routes of travel. Small things such as cross-slopes on sidewalks, uneven surfaces (eg, cracks, roots, lips), slopes (eg, long ramps, hills), heavy doors or small door clearances, and other barriers become more obvious when a leader assumes similar circumstances as his or her Soldiers. Wearing mittens to reduce hand function or an eye patch to reduce vision, or using crutches can expand the experience. When

searching for physical barriers, it is not enough to simply move around or to observe. The experienced facilitator should have the leaders also try different tasks; order, carry, and eat a meal in the mess hall; purchase an item at the base exchange; use the washer/dryer at the barracks; use an elevator; enter the bathroom of the barracks room; or ride base transportation. Leaders will find that it can take 10 minutes to load a wheelchair on a bus using a lift and getting it properly tied down, making trip planning more complicated and less spontaneous. The more informed leaders are, the better they can provide the necessary services to their Soldiers.

Attitudinal barriers are often the most deep rooted and difficult to alter. Prejudices against people with disabilities are long-standing beliefs for many people. Attitudinal barriers often are the biggest hurdles for returning to work, maintaining healthy relationships, advancing, and fully participating in society. It may be surprising to learn that often the beliefs of the wounded, injured, or ill Soldiers and the people with whom they interact present barriers. Since Soldiers by necessity are fit and physically tough, becoming wounded, injured, or ill challenges strongly held self-images. Often these Soldiers have a low early assessment of their potential abilities and have serious concerns about their potential to provide for their future. This may present challenges for the Soldier and all of the people working with him or her. It is important to help wounded, injured, or ill Soldiers to remain forward focused for their future, and not to overly dwell on their losses or obsess with securing benefits and privileges. Some period of mourning is natural and healthy. An unhealthy attitude on the part of the Soldier can lead to lethargy, malingering, exacerbation of symptoms, self-medication, and harmful behaviors. Leaders need to be aware of the risks of these behaviors in their Soldiers and seek professional assistance as soon as risky behavior is suspected. Creating healthy attitudes among staff requires regular education and reinforcement. Professionals such as rehabilitation counselors can be very helpful, as can instructors with disabilities who have been successful despite their limitations. Some WTUs have successfully used peer counselors, which can be a very effective tool as long as they are carefully screened and if possible trained in their responsibilities.

Soldiers respond better to people they believe and who truly do care for them and have their best interest at heart. It is difficult or impossible to really care for someone if you do not know him or her. It is important for leaders within the WTU to know their Soldiers. WTLs need to know the their Soldiers' family situations, friends, who they "hang out with" in the barracks or on weekends, types of units in which they have served, history, previous stations, and hobbies (eg, hunting, sports, video games). Leaders need to know if their Soldiers have a support system through their family, friends, their prior unit, or within the WTU. Do the Soldiers in their charge make friends quickly

or do they require more time? Do they have any friends available to them while in the WTU? Internet connectivity and phone cards are simple and effective means for Soldiers to remain in contact with family, friends, and their comrades who are likely serving elsewhere.

Many Soldiers think it is important for them to remain connected to their units and participate in homecoming celebrations when their units return from overseas deployments. These activities are important to Soldiers in their healing and provide an incentive in achieving medical rehabilitation goals. Also, traveling for the first time postwound, injury, or illness itself is a notable accomplishment. Reunions are also important to the morale of the unit, whose members benefit from seeing their wounded, injured, or ill comrades while recovering or after reintegration. The anxiety of the unknown can be a tremendous strain for both the Soldier and his or her unit, when someone is rapidly removed because of wounds, injury, or illness and there is inadequate followup.

WTLs also need to ensure that their Soldiers receive deserving recognition and earned awards. America owes all Soldiers a debt of gratitude. It is well known that less than 1% of Americans serve in uniform, and only about 10% of living Americans have ever served in the armed forces. A sense of frustration and neglect can grow in wounded, injured, or ill Soldiers who have not been duly and fairly recognized for their contributions. This lack of recognition can undermine healing, medical rehabilitation, and reintegration. Leaders should ensure that their Soldiers receive awards and promotions in a timely manner with an appropriate ceremony. Although Soldiers may report that such things are not important to them, it is essential that their leaders follow through. At times, rumors circulated that Soldiers within the WTU do not get promoted as rapidly as their peers or that they reach a glass ceiling. The Army regularly publishes reports on promotion statistics, and it is important for WTLs to be aware of the facts to present them to their Soldiers. Historically, no statistically significant difference existed in the rates of promotion for Soldiers within WTUs as compared to the Army as a whole.

Soldiers within WTUs should be kept busy participating in meaningful activities. In the early stages after being wounded, injured, or becoming ill, the routine of hospitalization, treatments, medications, and therapies keeps Soldiers occupied during their waking hours. However, as they recover, some Soldiers may find themselves with more free time that can lead to minor problems such as spending too many hours playing video games or more serious problems such as self-medication and substance abuse. Soldiers need a sense of purpose and measures of progress. Multiple surgeries, course of medical treatments, and processing of evaluations can take months and—in some cases—years. The Army has retained wounded, injured, or ill Soldiers

within military treatment facilities or their partnering VA medical centers to afford every Soldier the best opportunity to continue on active duty (COAD) or to successfully transition to becoming a productive Veteran. This change in practice is based on previous experiences of Soldiers reporting that they felt that the Army dismissed them abruptly once they were wounded, injured, or severely ill, despite the Soldiers' desire to continue to serve. More than one-half of WTU Soldiers do COAD after their course of treatment, and nearly 20% of Soldiers who have had a limb amputated COAD. Even Soldiers who have been blinded or who have paralysis due to spinal cord injuries COAD and have had successful military careers.

Many programs described within this book are designed to help keep Soldiers actively engaged in their healing, self-improvement, education, and career building either within the Army or as a successful Veteran. It is important for the "triad of care" and the leadership to ensure that Soldiers participate, advance, and achieve the goals within their Comprehensive Transition Plans. Past history and scientific research show clearly that wounded, injured, or ill Soldiers will live longer, healthier, happier, and more productive lives if they become engaged in meaningful activities as soon as they are able. Productive work including COAD, for compensation is a powerful tool for helping wounded, injured, or ill Soldiers to physically, mentally, and emotionally recover. Goal attainment, empowerment, and a sense of contribution are key components to resilience, and early intervention in these domains can have a significant long-term impact. One's profession or employment setting often defines his or her role in society. It is often one of the first questions asked when meeting someone new: what do you do for a living? Being a Soldier is a proud and respected profession; if that is no longer a viable option, a person's sense of self-worth and role in society may be dramatically altered. There is rightfully an earned sense of pride to say that one is a retired Soldier, but when one is injured younger in life, there is ample opportunity to start a second career. Life need not—and arguably should not—revolve solely around employment, but work of many kinds is very important. All wounded, injured, or ill Soldiers—if they are capable—should consider working or have the goal of working. Work may entail actively caring for one's children and family, attending college or a training program, coaching a local youth sports team, volunteering for a Veteran service organization or a military service organization, being active in a religious group, or participating in various activities that positively contribute to society and give a sense of purpose. While Soldiers are in the WTU, they should be engaged in work—whether assisting with the many tasks needed to run the WTU or supporting base activities—or be embedded with one of the many organizations, including Veteran service organizations, military service organizations, or another government agency,

that support the WTU. Something as simple as sending a Soldier who has participated in previous ski trips as a mentor to less experienced wounded, injured, or ill Soldiers can have tremendous benefits.

WTLs have little personal experience with disability or long-term recovery from wounds, injuries, or illnesses. Having a leadership experience within the WTC can be a very positive experience and helps leaders at all levels to improve their skills and gain better appreciation for their fellow Soldiers. It is remarkable—although almost a cliché—that people who visit the Walter Reed National Military Medical Center, Brooke Army Medical Center, or other military treatment facilities where many wounded, injured, or ill Soldiers bring a message of gratitude and hope and leave inspired by the remarkable resilience, dedication, selfless service, and sense of optimism that prevails. People who have not served find it difficult to understand the Army's culture, which thrives on (or strives for) teamwork, dedication, commitment, and determination. The Army is home to many remarkable and honorable individuals who uphold the finest traditions of service, honor, and duty. Often WTLs learn that the best values and traditions of the Army are exemplified in the most severely wounded, injured, or ill Soldiers, and that regardless of the length of time or period in history they served, their Army values and sense of service endures. A tour as a WTL could be one of the most memorable and important assignments of a career.



IN 2002, MELISSA STOCKWELL GRADUATED FROM the University of Colorado and was commissioned as an Army Second Lieutenant in the US Army's Transportation Corps. In March 2004, she deployed with the 1st Cavalry Division to Baghdad, Iraq. On April 13, 2004, she was on a routine convoy when a roadside bomb hit her HUMVEE. The blast resulted in the amputation of her left leg above the knee, and she became

the first female to lose a limb from the war in Iraq. After spending a year at Walter Reed Army Medical Center and undergoing multiple surgeries and rehabilitation, she was medically retired from the Army. For her courageous service, she was awarded a Purple Heart and a Bronze Star.

Following her retirement from the Army, athletics became a way of life for Stockwell. She has completed multiple triathlons and marathons on an arm-crank bike, learned to ski, become a competitive swimmer, and most recently, become a Paratriathlete. In April 2008, Stockwell became the first Iraqi War Veteran to qualify for the Paralympics when she earned a spot on the US Swim Team. In the 2008 Beijing Paralympics, she represented the United States in the 100-meter freestyle, 400-meter freestyle, and the 100-meter butterfly





events. She was also selected to carry the American flag in the Beijing closing ceremonies. After Beijing, Stockwell turned to the sport of triathlon. She became part of the 2010 Paratriathlon national team and recently won the Paratriathlon World Championships, making her the 2010 World Champion. Stockwell was recently named the 2010 Paratriathlete of the year and was inducted into the Pat McDonald Hall of Fame as the female with a disability athlete of the year.

Stockwell has completed the prosthetic practitioner program at Century College in Minnesota

where she learned to fit other amputees with artificial limbs. After completing her prosthetic residency at Scheck and Siress Prosthetics in Chicago, she is soon to be a certified prosthetist. She is also a level 1 certified triathlon coach and coaches a Paratriathlon team in the Chicago area.

Stockwell also serves on the board of directors for the Wounded Warrior Project and loves giving back to the organization that has helped her so much throughout the years. She also does motivational speaking to inspire others to overcome obstacles.

Stockwell is a proud American and loves life. She looks forward to what the next couple of years will bring.

Acknowledgments

IT TAKES MANY PEOPLE TO MAKE A BOOK come together, and this book was certainly a concerted team effort across multiple institutions, organizations, and offices. All of the people who contributed to this book are committed to helping wounded, injured, and ill Warriors to achieve their fullest potential and to have every opportunity in life. The people most important to the making of this book are those wounded, injured, and ill Soldiers who have served as examples of the power of the human spirit, and their families. America is indebted to them all, and the editors are especially grateful that F. Dawn Halfaker, Honorable Gordon H. Mansfield, Honorable L. Tammy Duckworth, Geoff Hopkins, Daniel Nevins, Melissa Stockwell, MAJ David Rozelle, LTC Daniel Dudek, John Register, Ron Drach, and Jeremy Feldbusch provided brief versions of their stories of recovery and success for inclusion in this book.

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Acronyms and Abbreviations

AAC	Augmentative and alternative communication
AAS	America's Adopt a Soldier
ACAP	Army Career and Alumni Program
ACS	Army Community Service
ACV	Air Compassion for Veterans
ADA	Americans with Disabilities Act
ADAAG	ADA Access Guidelines
ADL	Activity of daily living
AE	Adaptive equipment
AER	Army Emergency Relief
AFAP	Army Family Action Plan
AKO	Army Knowledge Online
AL	American Legion
ALS	Amyotrophic lateral sclerosis
AMC	Army Materiel Command
AMEDD	Army Medical Department
ARC	American Red Cross
ASR	Automated speech recognition
AT	Assistive technology
ATC	Achilles International
ATP	Assistive technology professional
AW2	Army Wounded Warrior Program
BVA	Blinded Veterans Association
C&P	Compensation and Pension
CAF	Challenged Athletes Fund
CAP	Computer/Electronic Accommodations Program
CDRS	Certified driver rehabilitation specialist
COAD	Continue on Activity Duty
COAR	Continue on Active Reserve
CRP	Comprehensive Recovery Program
CSF	Comprehensive Soldier Fitness
CTP	Comprehensive Transition Plan

DAV	Disabled American Veterans
DES	Disability Evaluation System
DHS	Department of Homeland Security
DoD	Department of Defense
DOL	Department of Labor
DSUSA	Disabled Sports USA
DTAB	Disabled Transition Assistance Program
DVOP	Disabled Veterans' Outreach Program
FPEB	Formal Physical Evaluation Board
HHS	Department of Health and Human Services
HO	Heterotopic ossification
HTH	Helmets to Hardhats
IADL	Instrumental activity of daily living
ICF	International Classification of Function, Disability, and Health
IDES	Integration Disability Evaluation System
IED	Improvised explosive device
IMR	Independent Medical Review
IPEB	Informal Physical Evaluation Board
JAN	Job Accommodation Network
LVER	Local Veterans' Employment Representative
MEB	Medical Evaluation Board
MOPH	Military Order of the Purple Heart
MS	Multiple sclerosis
MSO	Military service organization
NRD	National Resource Directory
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OPM	Office of Personnel Management
OT	Occupational therapist
OWF	Operation Warfighter

PEB	Physical Evaluation Board
PEBLO	Physical Evaluation Board Liaison Officer
PMR	American Board of Physical Medicine and Rehabilitation
PT	Physical therapist
PTSD	Posttraumatic stress disorder
PVA	Paralyzed Veterans of America
RCC	Recovery Care Coordinator
RESNA	Rehabilitation Engineering and Assistive Technology Society of North America
RSM	Recovering service member
SA	Salvation Army
SCI	Spinal cord injury
SFAC	Soldier and Family Assistance Center
SLP	Speech and language pathologist
SSA	Social Security Administration
SSDI	Social Security Disability Insurance Program
SSI	Supplemental Security Income
TAP	Transition Assistance Program
TBI	Traumatic brain injury
USO	United Service Organization
USPMSP	US Paralympics Military Sports Programs
VA	Department of Veterans Affairs
VEOA	Veterans' Employment Opportunity Act
VETS	Veterans' Employment and Training Service
VFW	Veterans of Foreign Wars
VR&E	Vocational Rehabilitation and Employment
VSO	Veteran service organization
WSW	Wall Street Warfighters
WT	Warrior in Transition
WTC	Warrior Transition Command
WTL	Warrior Transition Leader
WTU	Warrior Transition Unit
WWP	Wounded Warrior Project

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